6.5

Clarion

SERVICE MANUAL

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MODEL MA-7800G MA-7600G

Fabricant: CLARION CO., LTD./Exportation: CLARION SHOJI CO., LTD.
3, Kojimachi 5-chome, Chiyoda-ku, Tokyo 102 Japan Tel. (265) 2931 Telex J22908 J22152 CLARISHO
Succursales outre-mer:
CLARION SHOJI (EUROPA) G.M.B.H. 2000 Hamburg 76, Schöne Aussicht 35, West Germany Tel. 220-7667 Telex 41214969
CLARION SHOJI CO., LTD. (U.S.A.) 5500 Rosecrans Ave., Lawndale, Calif. 90260 U.S.A. Tel. 213-973-1100 Telex 66-4447
CLARION CORPORATION OF AMERICA 5500 Rosecrans Ave., Lawndale, Calif. 90260 U.S.A. Tel. 213-973-1100 Telex 66-4447
CLARION CORPORATION OF AMERICA, EASTERN DIVISION 421 North Midland Ave., Saddle Brook, N.J. 07662 U.S.A. Tel. 201-791-1200 Telex 13805
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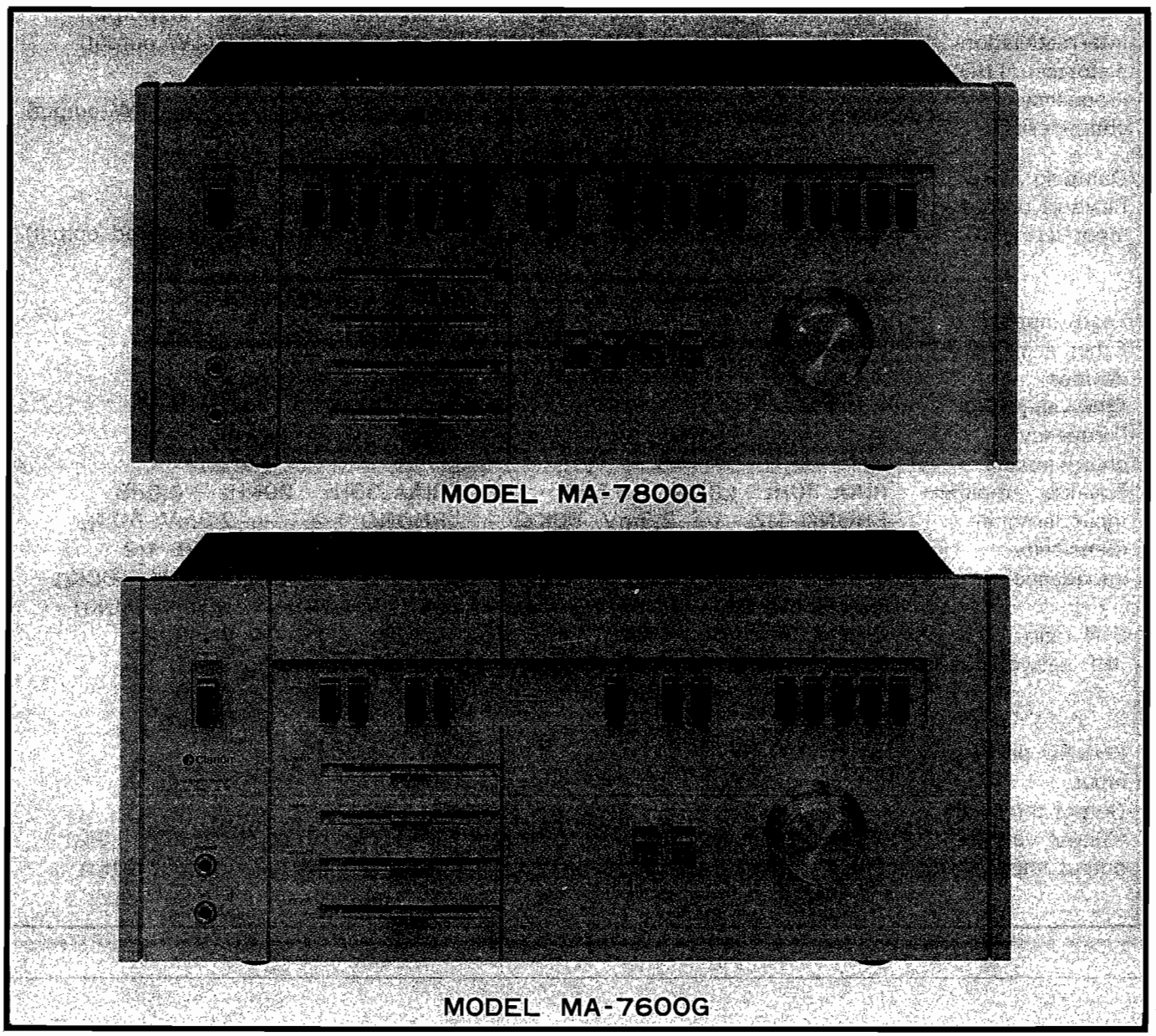


MODEL MA-7800G

MODEL MA-7600G

Printed in Japan 298-1824-00

MA-7800G
MA-7600G

■SPECIFICATIONS

Item \ Model	MA-7800G	MA-7600G
Circuit system	All direct-coupled pure complementary power amplifier circuit.	All direct-coupled pure complementary power amplifier circuit.
Semiconductors	Equalizer circuit and NFB type tone control circuit using IC. 1 ICs, 29 transistors, 11 diodes	Equalizer circuit and NFB type tone control circuit using IC. 1 IC, 28 transistors, 11 diodes
■Power amplifier		
Music power	125W (at 8 load, 0.1% THD)	100W (at 8 load, 0.1% THD)
Rated output	50W+50W (8 load, 0.1% THD, single channel operation) 45W+45W (8 load, 0.1% THD, both channel operation)	35W+35W (8 load, 0.1% THD, single channel operation) 30W+30W (8 load, 0.1% THD, both channel operation)
Output bandwidth	5Hz ~ 50KHz (8 load, 0.1% THD, both channel operation)	5Hz ~ 35KHz (8 load, 0.1% THD, both channel operation)
Total harmonic distortion (THD)	Less than 0.1% (at rated output) Less than 0.03% (at 20W output) Less than 0.03% (at 1W output)	Less than 0.1% (at rated output) Less than 0.03% (at 20W output) Less than 0.03% (at 1W output)
Intermodulation distortion (THD)	Less than 0.05% (at 1W output)	Less than 0.05% (at 1W output)
Frequency characteristic	5Hz ~ 150KHz $\binom{+0dB}{-3dB}$ (at 1W output)	5Hz ~ 150KHz $\binom{+0dB}{-3dB}$ (at 1W output)
Damping factor	Larger than 70 (8 load)	Larger than 70 (8 load)
Residual output	Less than 0.3mV	Less than 0.3mV
Input terminal	Input sensitivity 0.8V (at rated output) Input impedance 50K	Input sensitivity 0.8V (at rated output) Input impedance 50K
Load impedance	4 ~ 16 Ω	4 ~ 16 Ω
Other accessory devices		
■Pre-amplifier		
Frequency characteristic	5Hz ~ 80KHz $\binom{+0dB}{-3dB}$	5Hz ~ 80KHz $\binom{+0dB}{-3dB}$
Equalizer amplifier	RIAA 30Hz ~ 20KHz ±0.5dB	RIAA 30Hz ~ 20KHz ±0.5dB
Input terminal (Sensitivity, impedance)	PHONO 1.2 ·····2.3mV, 50KΩ TUNER, AUX 1.2, TAPE 1.2 ·····150mV, 100Ω MIC (MIXING) ·····2.5mV, 30KΩ	PHONO 1.2 ·····2.3mV, **50KΩ** TUNER, AUX 1.2, TAPE 1.2 ·····150mV, **100KΩ** MIC (MIXING) ·····2.5mV, **30KΩ**
S/N ratio (IHF network used)	PHONO 1.2 ·····75dB TUNER, AUX 1.2, TAPE 1.2 ·····90dB MIC ·····75dB	PHONO 1.2 ·····75dB TUNER, AUX 1.2, TAPE 1.2 ·····90dB MIC ·····75dB
PHONO permissible input	350mV (P-P)	350mV (P-P)
Output terminals (Output voltage, output impedance)	TAPE REC 1.2 ·····150mV, 10KΩ TAPE 2, DIN ·····30mV, 80KΩ PRE OUT ·····0.8V, 27KΩ	TAPE REC 1.2 ·····150mV, 10KΩ TAPE 2, DIN ·····30mV, 80KΩ PRE OUT ·····0.8V, 27KΩ

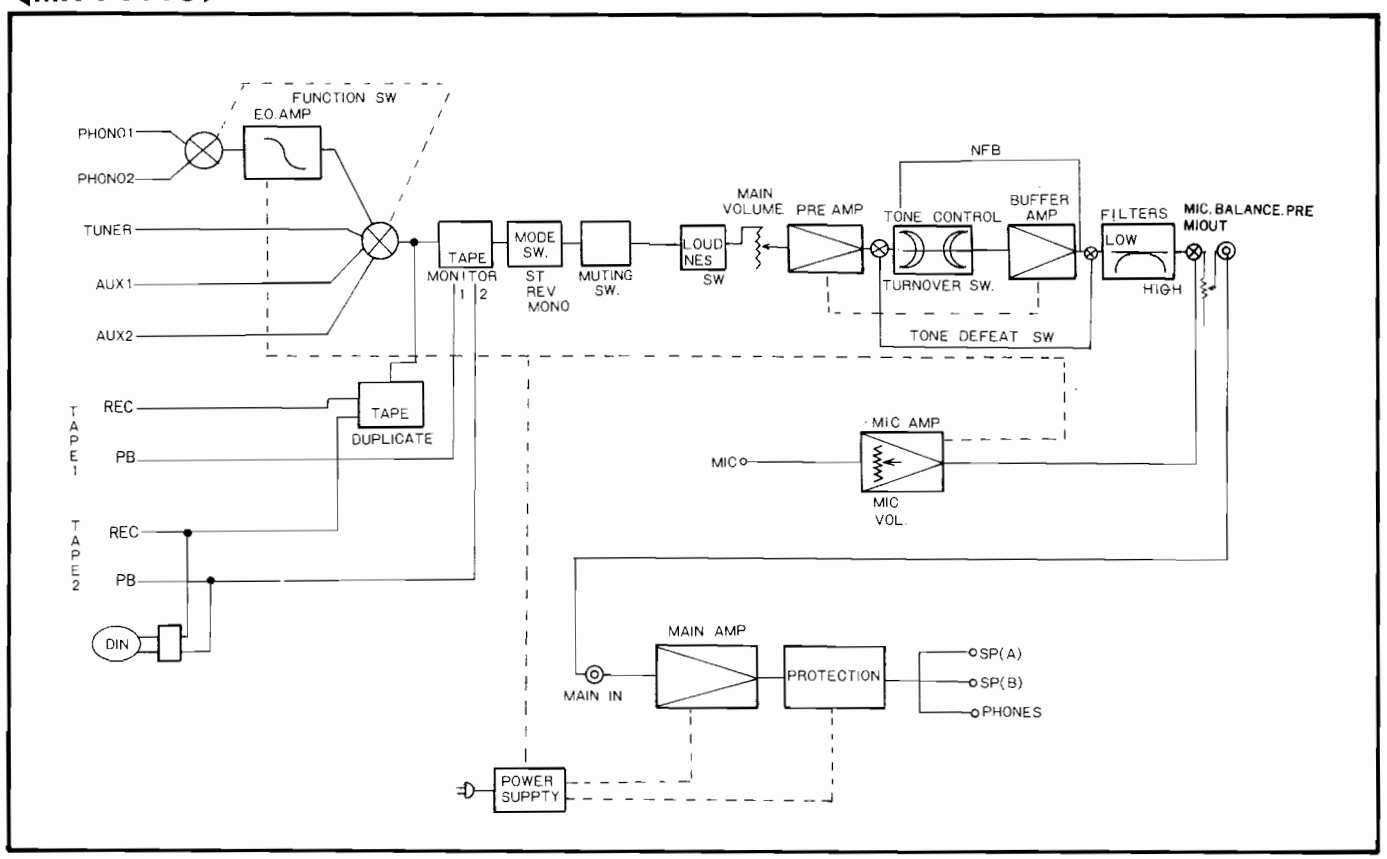
Item \ Model	MA-7800G	MA-7600G
Tone control	BASS Turnover frequency 500Hz·····100Hz ±10dB 250Hz····· 50Hz ±10dB TREBLE Turnover frequency 2.5KHz·····10KHz ±10dB 5.0KHz·····20KHz ±10dB Filter LOW·····70Hz (6dB/OCT) HIGH·····7KHz (6dB/OCT)	BASS 100Hz ±10dB TREBLE 10KHz ±10dB Filter LOW·····70Hz (6dB/OCT) HIGH·····7KHz (6dB/OCT)
Loudness	100Hz +8dB (VOL. control 10KHz +4dB at −30dB)	100Hz +8dB (VOL. control 10KHz +4dB at −30dB)
Muting	−20dB	−20dB
Other accessory devices	Speaker terminals (2 system (A, B) switchable) Headphone terminal, Pre-main amp., connector Power connector	Speaker terminals (2 system (A, B) switchable) Headphone terminal, Pre-main amp. connector Power connector
■Power supply and other		
Power consumption	200W	200W
Power requirement	AC 117V, 220V, 240V	AC 117V, 220V, 240V
Dimensions	Breadth·····467m/m Height ·····207m/m Depth ·····255m/m	Breadth·····467m/m Height ·····207m/m Depth ·····255m/m
Weight	Approx. 10kg	Approx. 10kg

■FEATURES

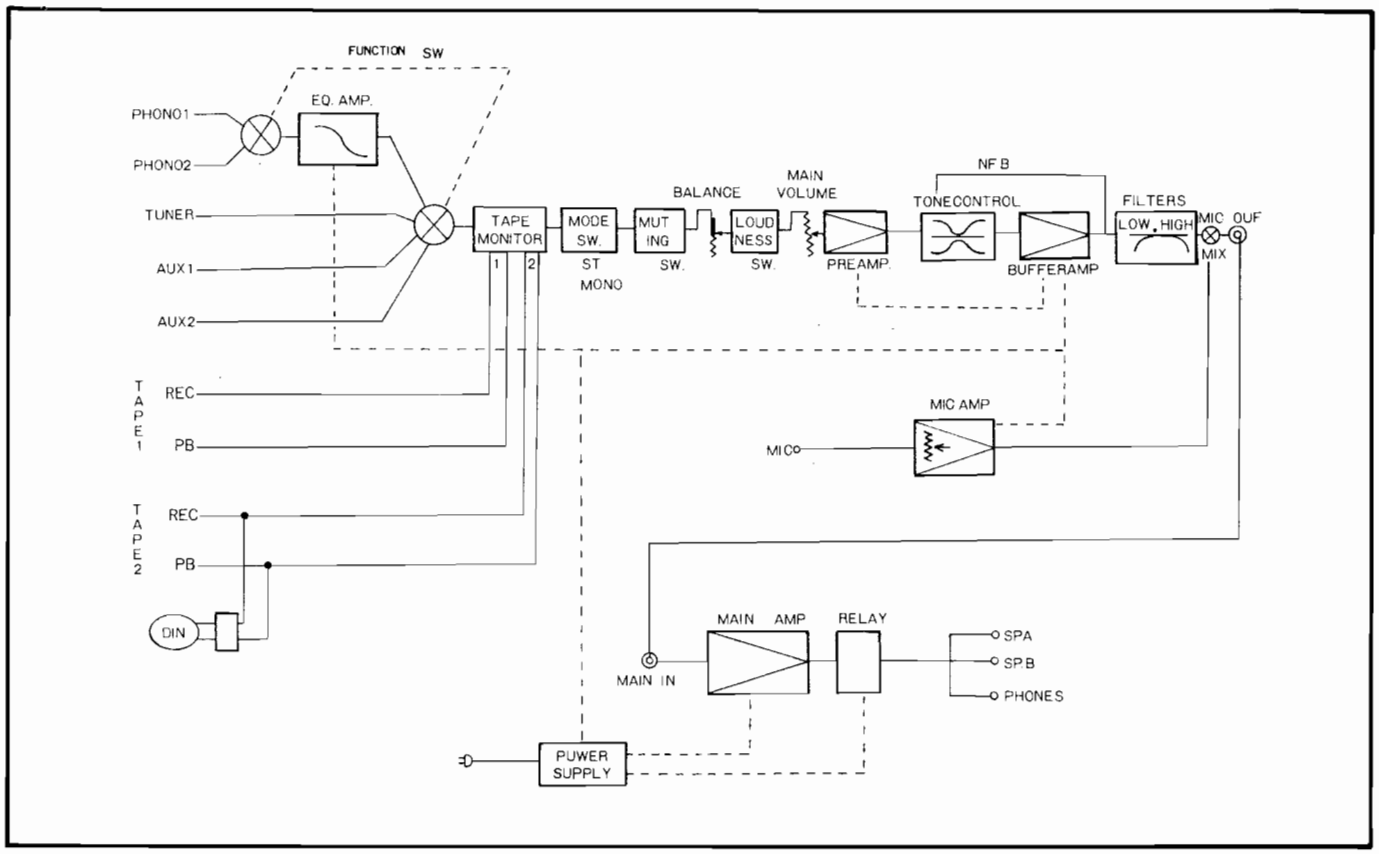
- Pure complementary OCL power amplifier built-in. **◀MA-7800G, MA-7600G▶**
- Superb equalizer circuit using high-performance IC. **◀MA-7800G, MA-7600G▶**
  A high-performance, low-noise IC is used in the equalizer amplifier so that besides achieving RIAA equalization a dynamic record reproduction is obtained.
- Mic. mixing mechanism for additional pleasure. **◀MA-7800G, MA-7600G▶**
  In addition to master Volume control a Mic. Amp. use Volume control is provided for background mixing with music source.
- Two systems of speaker can be used. **◀MA-7800G, MA-7600G▶**
  Two sets of speaker system can always be used without changing connections of speaker cords.
- Built-in protection circuit. **◀MA-7800G▶**
  A protection circuit for eliminating shock sound when power is turned on and protecting the power transistors against damage when output (speaker cord, etc.) is shorted is built-in.
- Built-in muting circuit. **◀MA-7600G▶**
  A muting circuit for eliminating shock sound when power is turned on is built-in.
- Tone control circuit **◀MA-7800G▶**
  ①The tone control circuit employs NFB system.
  ②Tone control selection is possible by means of turnover frequency selector switch.
  ③Flat characteristic without using the tone control circuit can be instantly obtained by means of tone defeat switch.
- Tone control circuit **◀MA-7600G▶**
  The tone control circuit employs NFB system.
- Tape Monitor and Duplicate switch. **◀MA-7800G▶**
  Tape monitor switch for 2 systems and duplicator switch are employed so that dubbing between tape monitor and tape deck can be accomlished.
- Tape monitor and duplicate mechanism. **◀MA-7600G▶**
  2-system tape monitor swich and TAPE1 → TAPE2 duplicate mechanism are built-in so that dubbing between tape monitor and tape deck can be accomplished.

■BLOCK DIAGRAM

◀MA-7800G▶

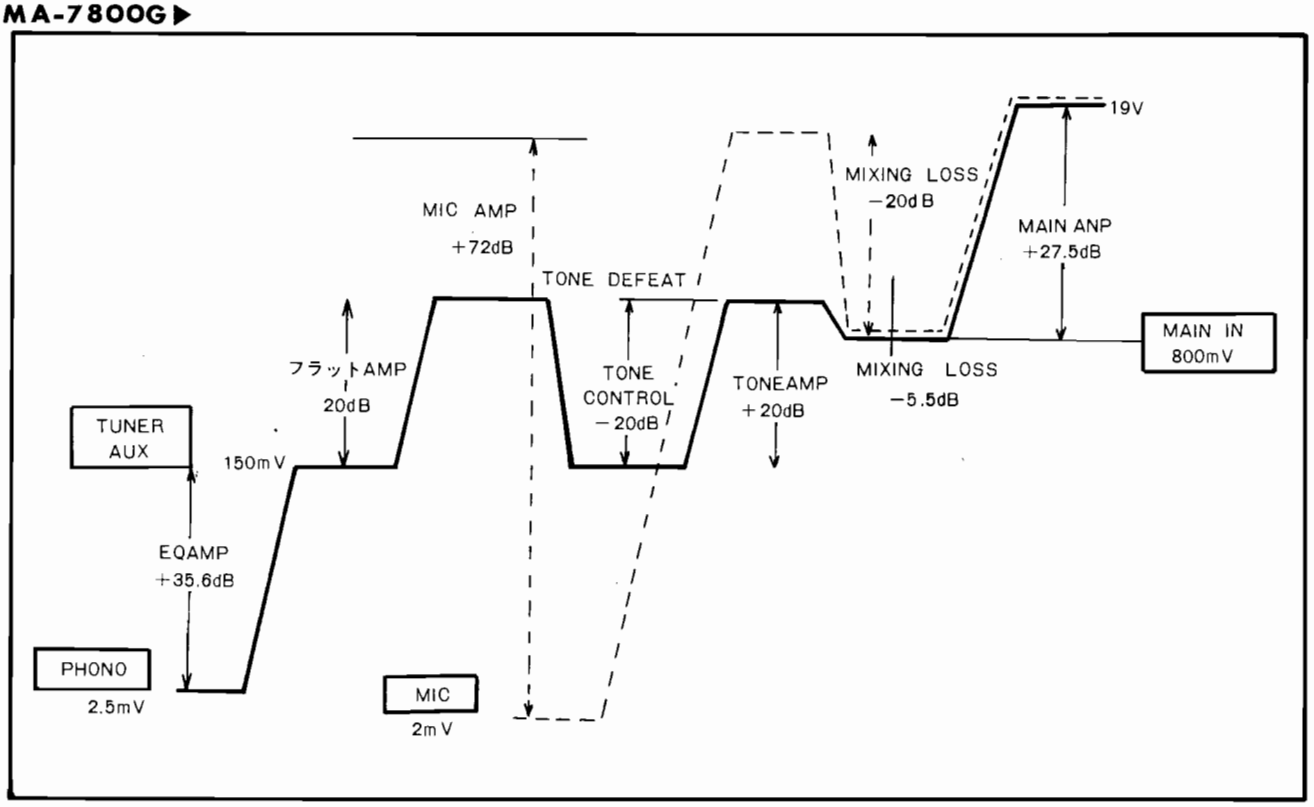


◀MA-7600G▶

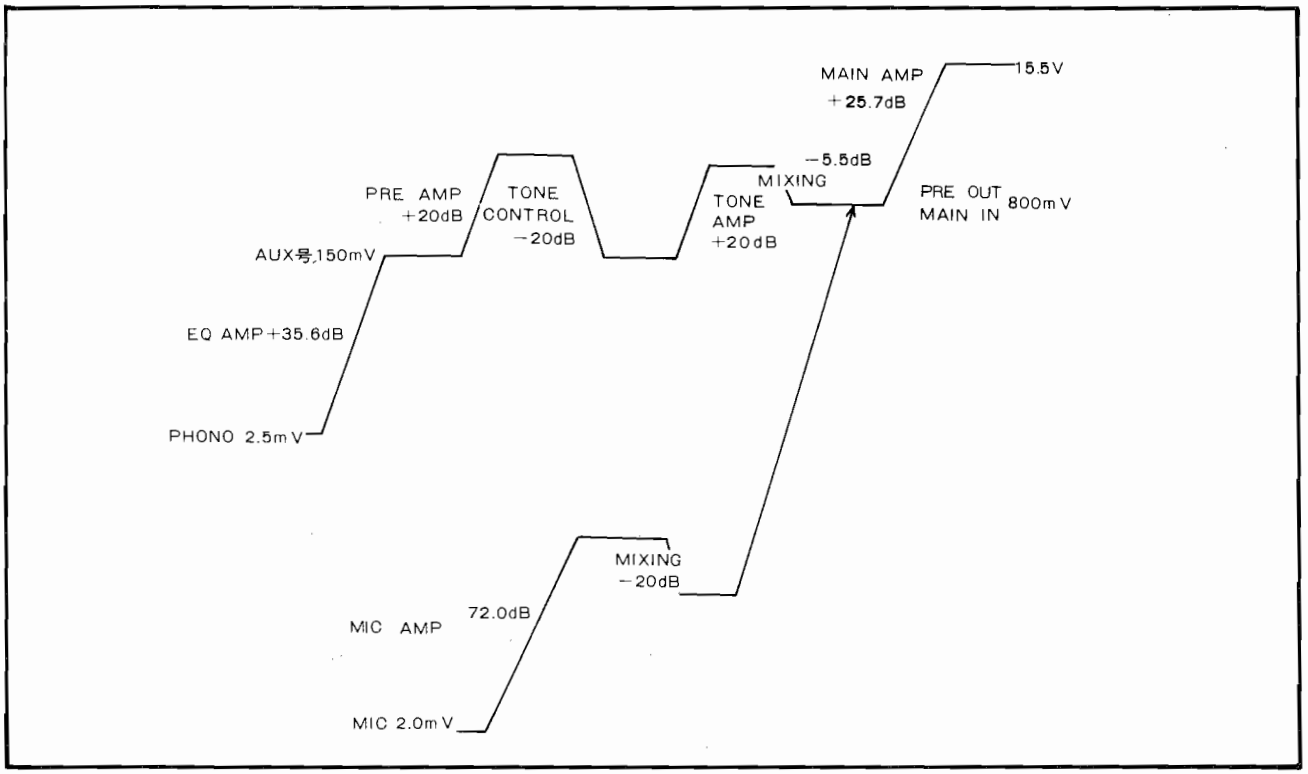


■LEVEL DIAGRAM

◀MA-7800G▶

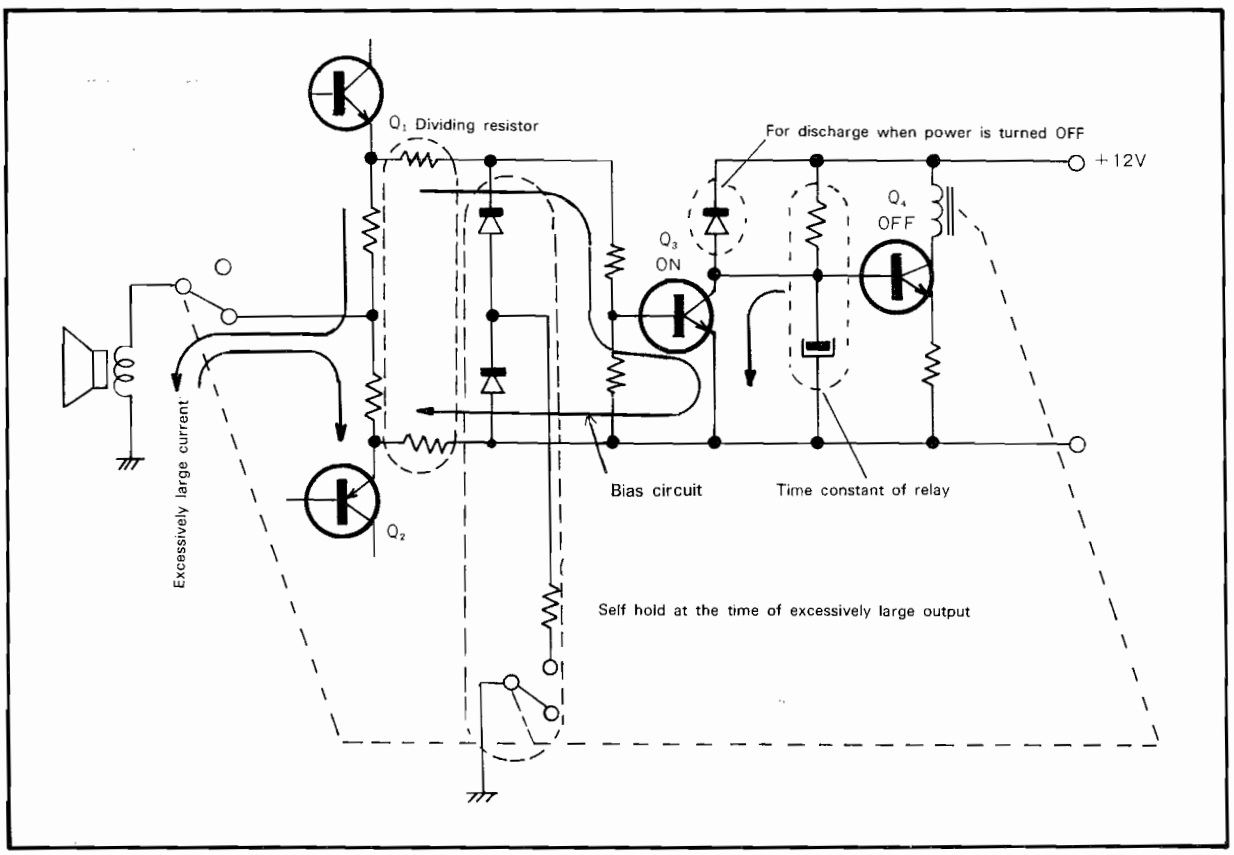


◀MA-7600G▶



■PROTECTION CIRCUIT OPERATION

◀MA-7800G▶

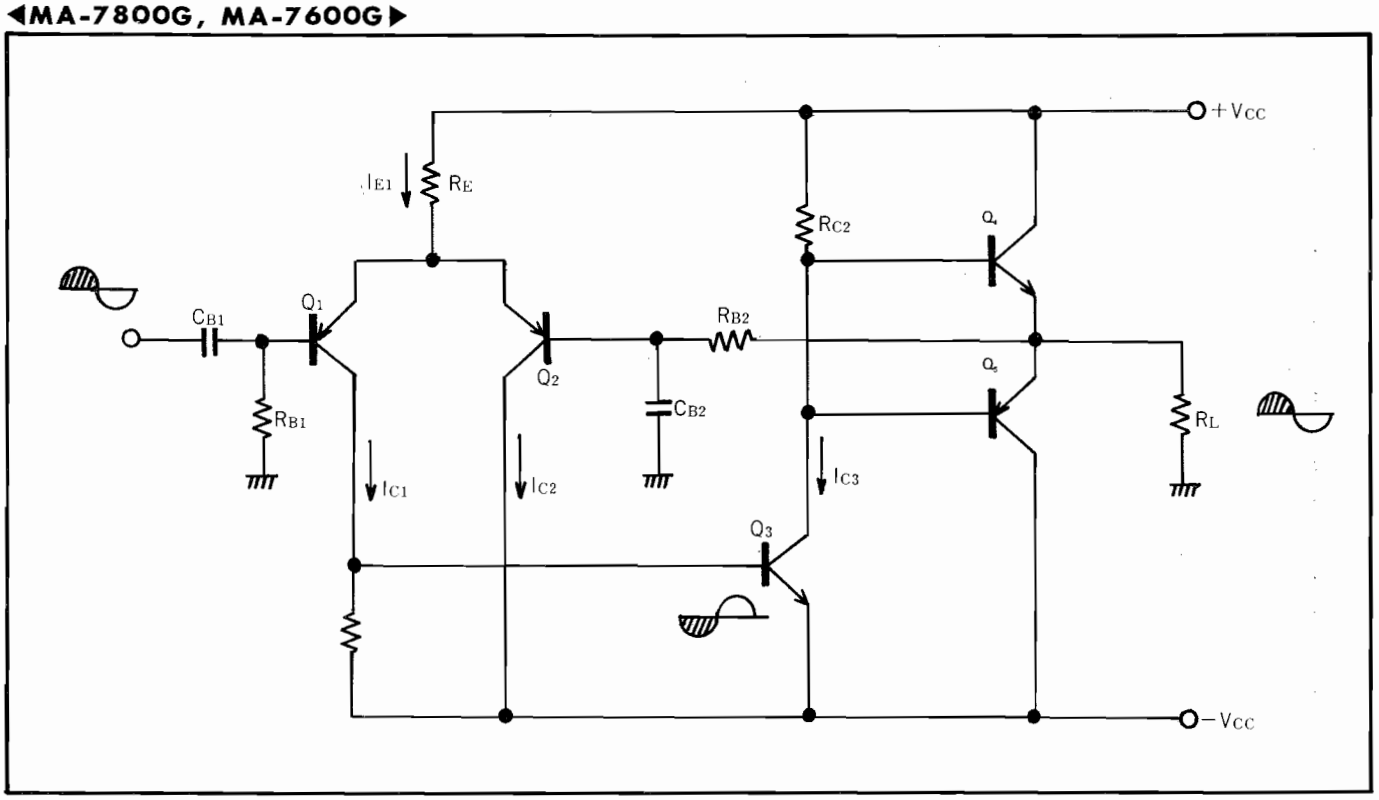


When exceedingly large current flows through speaker, bias current flows in Q3 and Q3 turns ON, potential of the base of Q4 becomes almost zero.

Therefore, Q4 turns OFF and at the same time the relay also turns OFF, output transistors (Q1, Q2) and speaker are separated and both are protected.

■POWER AMPLIFIER CIRCUIT OPERATION

◀MA-7800G, MA-7600G▶



Signal enters into the base of Q1 and appears at the base of Q3 in opposite phase.
Considering that negative half cycle signal enters into the base of Q3, positive half cycle appears at the collector of Q3 and enters into the base of Q4. Base potential of Q4 increases, collector current of Q4 increases, and positive half cycle is produced across R_L. At this time, Q5 becomes cutoff because it is NPN type. Conversely, when a positive half cycle signal enters into the base of Q3, current flows through collector of Q5 and a negative half cycle is produced across R_L.

[**Regarding holding point (A) at zero potential**]
Zero potential is necessary because if there is potential at point (A), continuous DC current flows through R_L (that is, voice coil of speaker), at the same time V_{BE} of Q4 and Q5 becomes unbalanced, and waveform distortion appears amplified across R_L.

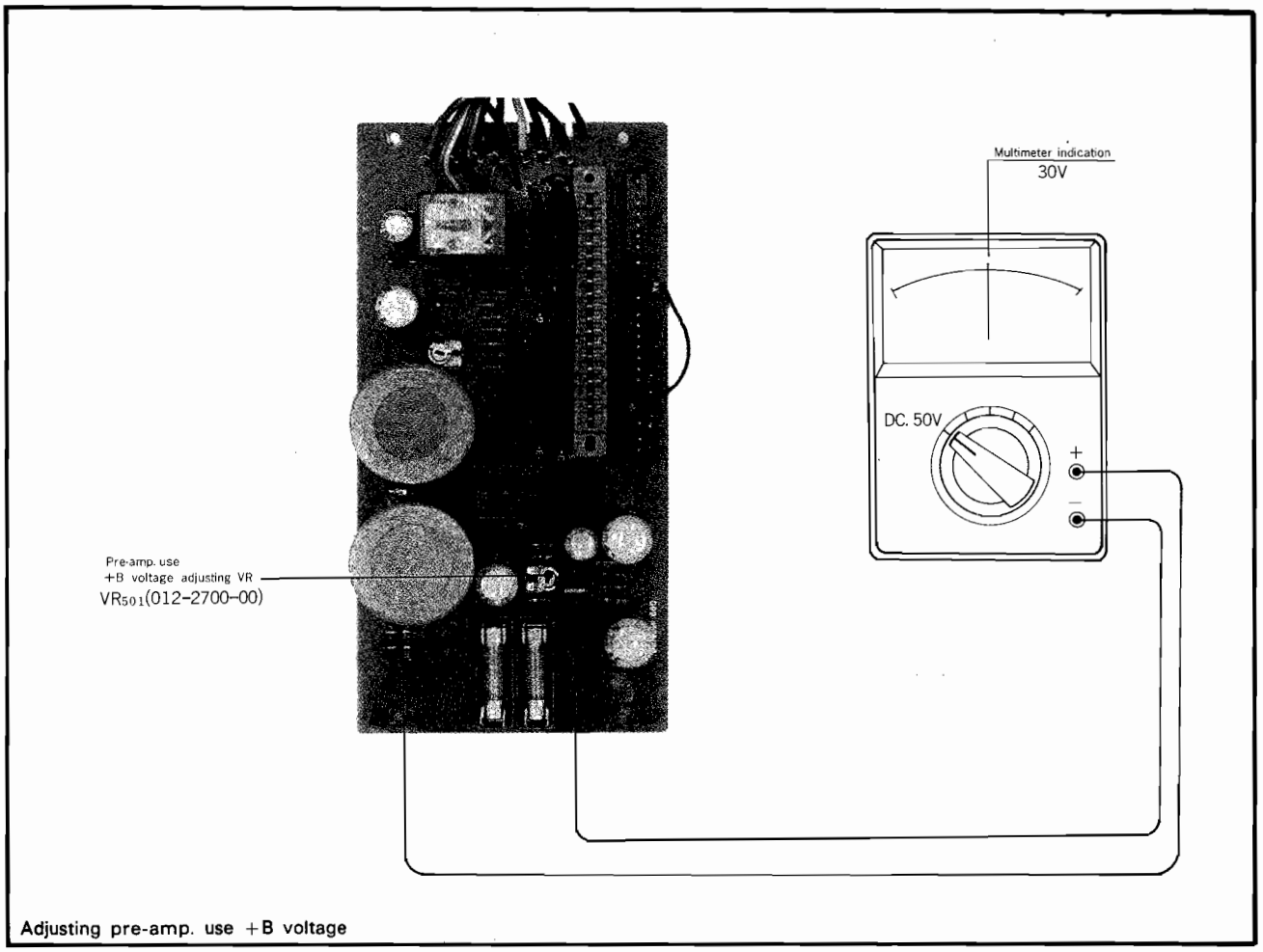
When somehow potential of point (A) decreases -ve potential), base potential of Q2 decreases, collector current I_{C2} of Q2 increases, and I_{C1} decreases.
(This is because $I_E = I_{C1} + I_{C2}$). Voltage drop across R_{C1} decreases and bias of Q3 also decreases. I_{C3} decreases, bias of Q4 increases, and potential of point (A) increases.
Conversely, when somehow potential of point (A) increases, base potential of Q2 increases, I_{C2} decreases and I_{C1} increases. Voltage drop across R_{C1} increases and bias of Q3 increases.
I_{C3} increases, bias of Q5 increases, and bias of Q4 decreases, and potential of point (A) decreases. In this way potential at point (A) is always maintained zero.

■ADJUSTMENT PROCEDURE

1. Adjustment of pre-amplifier use +B voltage
◀MA-7800G, MA-7600G▶

①Connect positive lead of multimeter to +B terminal of power supply PWB and minus lead to the ground side of solid resistor R1. 2W4. 7KΩ.

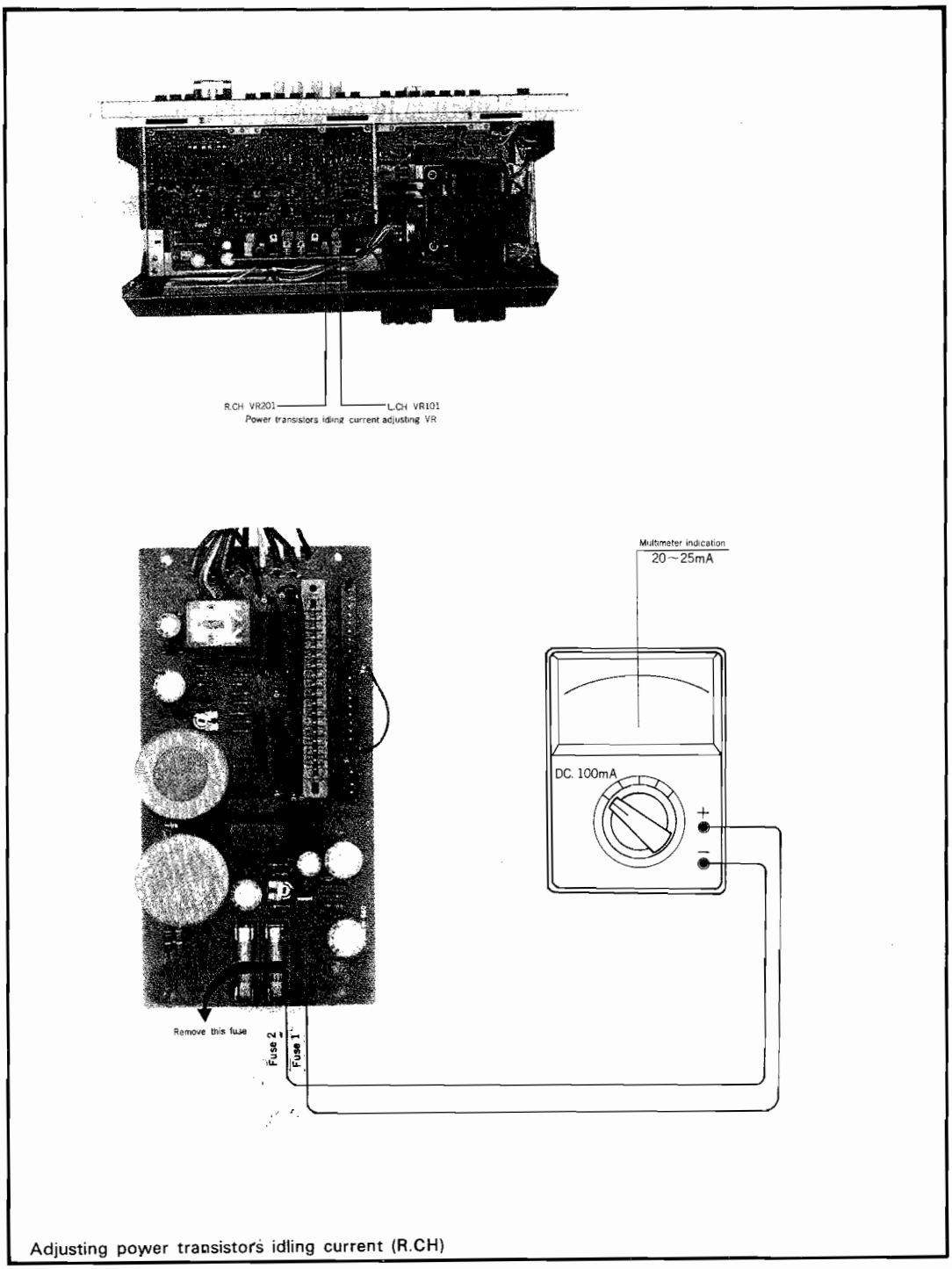
②Adjust by turning the semifixed potentiometer VR501 (012-2700-00) with a screwdriver so that deflection in the mutimeter becomes 30V.



Adjusting pre-amp. use +B voltage

2. Adjusting idling current of power transistors ◀MA-7800G▶

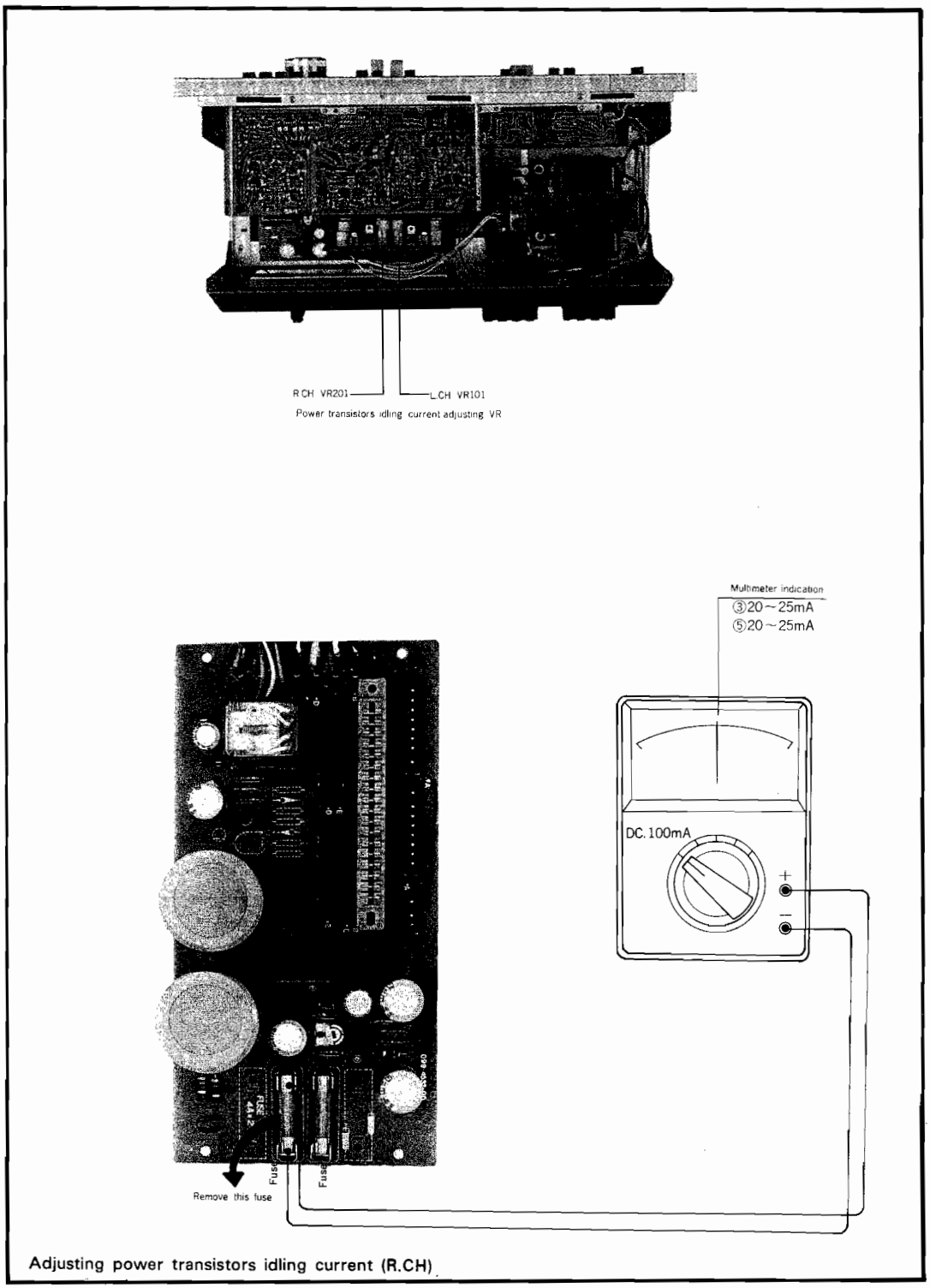
1. Verify that there is no signal.
2. Remove fuse 2 and connect a multimeter to the terminals of the fuse holder.
3. Adjust the power transistors idling current adjusting VR (right CH) VR201 so that deflection in the multimeter becomes 20～25 mA.
   After completing adjustment of right CH insert fuse 2.
4. Remove fuse 1 and connect the multimeter to the terminals of the fuse holder.
5. Adjust the power transistors idling current adjusting VR (left CH) VR101 so that deflection in the multimeter becomes 20～25 mA.



Adjusting power transistors idling current (R.CH)

◀MA-7600G▶

1. Verify that there is no signal.
2. Remove fuse 2 and connect a multimeter to the terminals of the fuse holder.
3. Adjust the R.CH adjusting potentiometer VR 201 so that deflection in the multimeter becomes 20～25mA.
   After completing adjustment of right CH insert fuse 2.
4. Remove fuse 1 and connect the multimeter to the terminals of the fuse holder.
5. Adjust the L.CH adjusting potentiometer VR 101 so that deflection in the multimeter becomes 20～25mA.
   After completing the adjustment insert fuse 1.



Adjusting power transistors idling current (R.CH)

■TROUBLESHOOTING (Refer to circuit diagram, actual wiring diagram, explded view)

	MA-7800G		MA-7600G	
Check point	DC.V	Contents	DC.V	Contents
CP_1	12.7V	Protection power supply voltage	12.7V	Relay circuit power supply voltage
CP_2	1.2V	Protector circuit	3V	Relay circuit
CP_3	13V	Protector circuit	±33V	Main-amp power supply voltage
CP_4	—	Protector circuit	±33V	Main-amp power supply voltage
CP_5	±36V	Main-amp power supply voltage	−1.1V	Main-amp circuit
CP_6	±36V	Main-amp power supply voltage	—	Main-amp circuit
CP_7	−1.0V	Main-amp circuit	0.66V	Main-amp circuit
CP_8	—		39V	Regulated power supply circuit
CP_9	0.66V	Main-amp circuit	30V	Regulated power supply circuit
CP_{10}	39V	Regulated power supply circuit	—	
CP_{11}	30V	Regulated power supply circuit	12.2V	Tone-amp circuit
CP_{12}	30V	Pre-amp power supply voltage	10.4V	Tone-amp circuit
CP_{13}	12.2V	Tone-amp circuit	27.6V	Tone-amp circuit
CP_{14}	10.4V	Tone-amp circuit	26V	Tone-amp circuit
CP_{15}	27.6V	Tone-amp circuit	12.2V	Tone-amp circuit
CP_{16}	26V	Tone-amp circuit	3.2V	Tone-amp circuit
CP_{17}	12.2V	Tone-amp circuit	18.5V	Tone-amp circuit
CP_{18}	3.2V	Tone-amp circuit	13.6V	Tone-amp circuit
CP_{19}	18.5V	Tone-amp circuit	0V	Equalizer-amp circuit
CP_{20}	13.6V	Tone-amp circuit	13.7V	Equalizer-amp circuit
CP_{21}	0V	Equalizer-amp circuit	26.1V	Equalizer-amp circuit
CP_{22}	13.7V	Equalizer-amp circuit	26.6V	Equalizer-amp circuit
CP_{23}	26.1V	Equalizer-amp circuit	13.7V	Equalizer-amp circuit
CP_{24}	26.6V	Equalizer-amp circuit	13.2V	Equalizer-amp circuit
CP_{25}	13.7V	Equalizer-amp circuit	13.5V	Equalizer-amp circuit
CP_{26}	13.2V	Equalizer-amp circuit	28.5V	Mic-amp power supply voltage
CP_{27}	13.5V	Equalizer-amp circuit	15V	Mic-amp circuit
CP_{28}	28.5V	Mic-amp power supply voltage	2.65V	Mic-amp circuit
CP_{29}	15V	Mic-amp output	2.2V	Mic-amp circuit
CP_{30}	2.65V	Mic-amp circuit	0.2V	Mic-amp circuit
CP_{31}	2.2V	Mic-amp circuit	0.05V	Mic-amp circuit
CP_{32}	—	Mic-amp circuit	5.7V	Mic-amp circuit
CP_{33}	0.05V	Mic-amp circuit	0.5V	Mic-amp circuit
CP_{34}	5.7V	Mic-amp circuit	0.45V	Mic-amp circuit
CP_{35}	0.5V	Mic-amp circuit	—	Main-amp input
CP_{36}	0.45V	Mic-amp circuit	—	Tone-amp circuit
CP_{37}	—	Main-amp input	—	Tone-amp input
CP_{38}	—	Tone-amp circuit	—	Equalizer output circuit
CP_{39}	—	Tone-amp input	—	Phono input circuit
CP_{40}	—	Equalizer output	—	Mic-amp circuit
CP_{41}	—	Phono input	—	Mic-amp input
CP_{42}	—	Mic V.R output		
CP_{43}	—	Mic-amp input		

MA-7800G

※First of all check if there is no faulty soldering, any connector is not loose or disconnected, or pre-main connecting plug is securely connected or not.

※Except Mic. Amp. power supply circuit, only L.CH indicates.

■No sound at all

NOTE) CP_1,CP_2,CP_3,CP_4 voltage : 13V line voltage with respect to ground

A. Voltage check

(A) Power supply section and power section

a) Power lamp is not lighting

- CP_1(12.7V) — NG — Power switch faulty
  - power fuse blown
  - Power transformer open (primary side or 11V)
  - D_{405} open
  - C_{402} short
- OK — PL faulty

b) Protection lamp is lighting

- CP_2(1.2V) — NG — Relay faulty
- OK — CP_3(1.3V) — NG — Q_{402} faulty; R_{407} open
- OK — CP_4(0V) — NG — Q_{11}, Q_{111} faulty; Speaker short
- OK — Q_{401} faulty; R_{406} open; C_{401} short

c) Protection lamp is off, relay makes contact but there is no sound

- CP_2(1.2V) — NG — Relay faulty
- OK — Protection lamp open
- CP_5($\frac{+36V}{-36V}$) — NG — Power transformer open; D_{406}, D_{407} open
- OK — CP_6($\frac{+36V}{-36V}$) — NG — Protecting fuse blown
- OK — CP_7(−1V) — NG — R_{161}, R_{162} open; Q_{108}, Q_{110} faulty; Q_{109}, Q_{111} faulty
- OK — CP_8(−35V) — NG — Q_{105}, Q_{106} faulty; R_{156} faulty; Q_{107} faulty; C_{131} short
- OK — CP_9(0.6V) — NG — R_{157}, R_{160} open; C_{128} faulty
- OK — C_{129}, R_{154} open; C_{127}, R_{153} faulty

MA-7600G

※First of all check if there is no faulty soldering, any connector is not loose or disconnected, or pre-main connecting plug is securely connected or not.

■No sound at all

NOTE) CP_1, CP_2 voltage : 13V line voltage with respect to ground

A. Voltage check

(A) Power supply section and power section

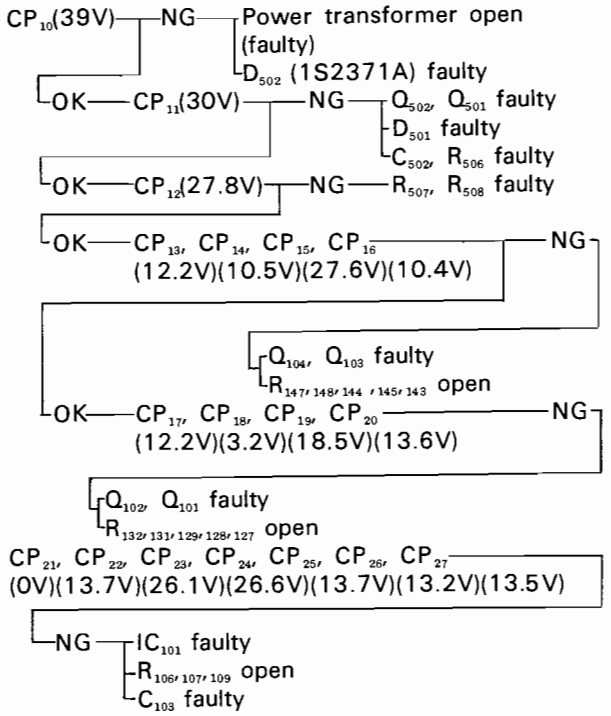
a) Power lamp is not lighting

- CP_1(13V) — NG — Power switch faulty
  - Power fuse blown
  - Power transformer open (primary side or 11V)
  - D_{403} open
  - C_{402} short
- OK — PL faulty

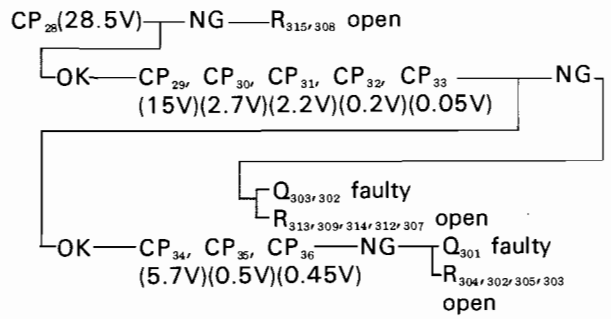
b) Power lamp is lighting but there is no sound.

- CP_2(3V) — NG — Relay faulty
- OK — Q_{401} faulty; R_{401}, R_{402} open; C_{401} short
- CP_3($\frac{+33V}{-33V}$) — NG — Power transformer open (46V); D_{404}, D_{405} open
- OK — CP_4($\frac{+33V}{-33V}$) — NG — Protecting fuse blown
- OK — CP_5(−1V) — NG — R_{159}, R_{160} open; Q_{108}, Q_{110} faulty; Q_{109}, Q_{111} faulty
- OK — CP_6(−32V) — NG — Q_{105},Q_{106} faulty; R_{154} short; Q_{107} faulty; C_{129} short
- OK — CP_7(0.6V) — NG — R_{155}, R_{158} open; C_{129} short
- OK — C_{127}, R_{152} open; C_{125}, R_{151} short

(B) Tone and equalizer section

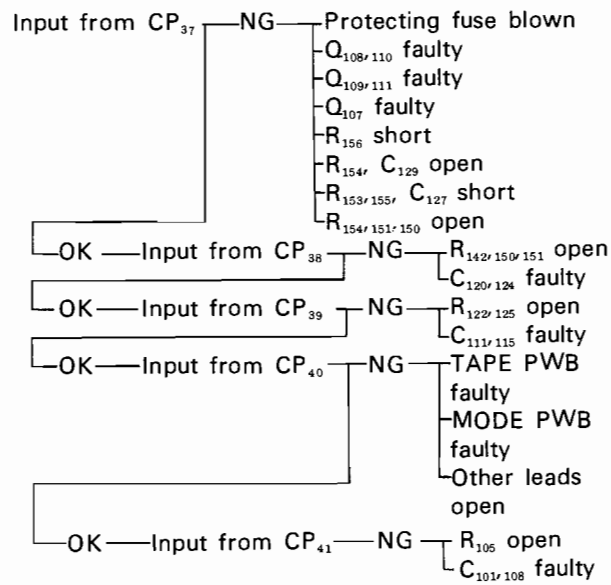

CP10(39V) NG Power transformer open (faulty)
D502 (1S2371A) faulty
OK CP11(30V) NG Q502, Q501 faulty
D501 faulty
C502, R506 faulty
OK CP12(27.8V) NG R507, R508 faulty
OK CP13, CP14, CP15, CP16 (12.2V)(10.5V)(27.6V)(10.4V) NG
Q104, Q103 faulty
R147, 148, 144, 145, 143 open
OK CP17, CP18, CP19, CP20 (12.2V)(3.2V)(18.5V)(13.6V) NG
Q102, Q101 faulty
R132, 131, 129, 128, 127 open
CP21, CP22, CP23, CP24, CP25, CP26, CP27 (0V)(13.7V)(26.1V)(26.6V)(13.7V)(13.2V)(13.5V)
NG IC101 faulty
R106, 107, 109 open
C103 faulty

(C) Mic. Amp. section.

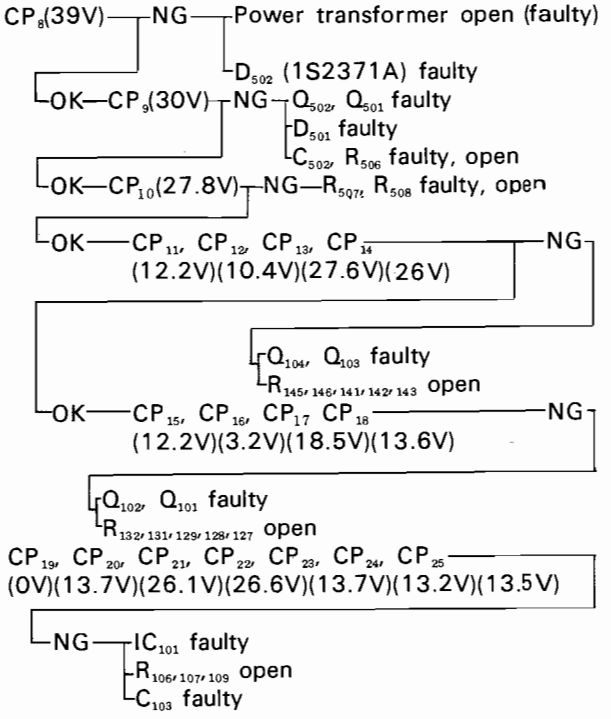


B. Signal circuit check

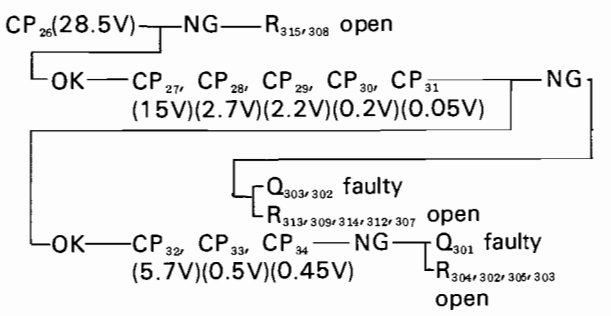
(A) Feed signal from oscillator and check at SP terminal.


Input from CP37 NG Protecting fuse blown
Q108, 110 faulty
Q109, 111 faulty
Q107 faulty
R156 short
R154, C129 open
R153, 155, C127 short
R154, 151, 150 open
OK Input from CP38 NG R142, 150, 151 open
C120, 124 faulty
OK Input from CP39 NG R122, 125 open
C111, 115 faulty
OK Input from CP40 NG TAPE PWB faulty
MODE PWB faulty
Other leads open
OK Input from CP41 NG R105 open
C101, 108 faulty

(B) Tone and equalizer section

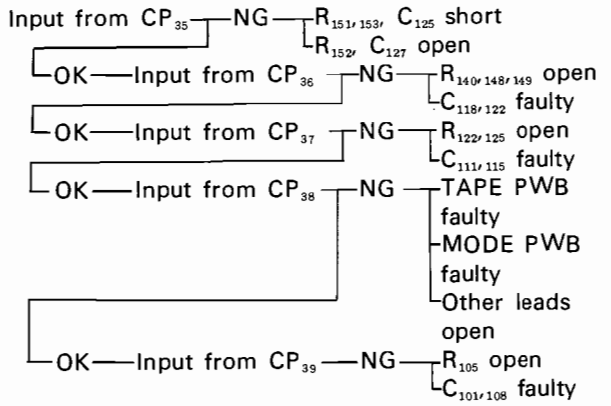

CP8(39V) NG Power transformer open (faulty)
D502 (1S2371A) faulty
OK CP9(30V) NG Q502, Q501 faulty
D501 faulty
C502, R506 faulty, open
OK CP10(27.8V) NG R507, R508 faulty, open
OK CP11, CP12, CP13, CP14 (12.2V)(10.4V)(27.6V)(26V) NG
Q104, Q103 faulty
R145, 146, 141, 142, 143 open
OK CP15, CP16, CP17 CP18 (12.2V)(3.2V)(18.5V)(13.6V) NG
Q102, Q101 faulty
R132, 131, 129, 128, 127 open
CP19, CP20, CP21, CP22, CP23, CP24, CP25 (0V)(13.7V)(26.1V)(26.6V)(13.7V)(13.2V)(13.5V)
NG IC101 faulty
R106, 107, 109 open
C103 faulty

(C) Mic. Amp. section.

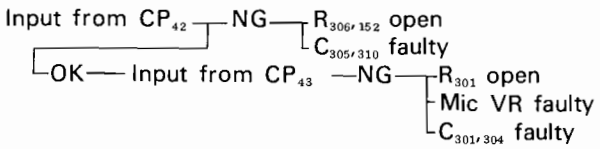


B. Signal circuit check

(A) Feed signal from oscillator and check at SP terminal


Input from CP35 NG R151, 153, C125 short
R152, C127 open
OK Input from CP36 NG R140, 148, 149 open
C118, 122 faulty
OK Input from CP37 NG R122, 125 open
C111, 115 faulty
OK Input from CP38 NG TAPE PWB faulty
MODE PWB faulty
Other leads open
OK Input from CP39 NG R105 open
C101, 108 faulty

(B) Mic. Amp. check.



■Sound volume is low

Perform the following checks after verifeing that normal voltage is being applied to each transistor.

Main Amp.
- C_{130} faulty
- Q_{108} faulty

Tone Amp.
- $C_{112,114,122}$ faulty

Equalizer Amp.
- $R_{109,111,110,112}$ faulty
- $C_{104,105}$ faulty
- $C_{101,108}$ faulty

Mic. Amp.
- $C_{301,305,310}$ faulty
- $R_{152,301,306}$ faulty

■Low, high tones absent

Tone Amp.
- $C_{111,115,120,124}$ faulty
- $C_{112,114,122}$ faulty

Equalizer Amp.
- $R_{110,111,112,104,105}$ faulty

■Sound is distorted

Power Amp.
- Q_{106} faulty
- D_{101} open

Tone Amp.
- $R_{136,141}$ faulty

Equalizer Amp.
- IC_{101} faulty
- $C_{106,107}$ faulty

Mic. Amp.
- $R_{310,390}$ faulty
- C_{308} faulty

■Oscillates

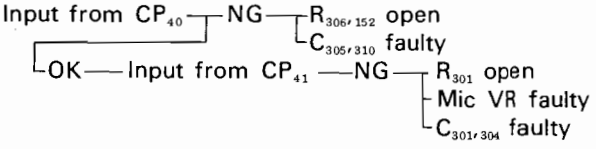
Power Amp.
- R_{167}, $C_{133,131}$ open

Tone Amp.
- $C_{113,121,123}$ faulty

Equalizer Amp.
- $C_{106,104,105}$ faulty
- $R_{109,106,107,110,111,112}$ open

Mic.Amp.
- $C_{307,306,304}$ faulty

(B) Mic. Amp. check.



■Sound volume is low

Perform the following checks after verifying that normal voltage is being applied to each transistor.

Main Amp.
- C_{128} faulty
- Q_{108} faulty

Tone Amp.
- $C_{112,114,122}$ faulty

Equalizer Amp.
- $R_{109,111,110,112}$ faulty
- $C_{101,108}$ faulty
- $C_{104,105}$ faulty

Mic. Amp.
- $C_{301,305,310}$ faulty
- $R_{150,301,306}$ faulty

■Low, high tones absent

Tone Amp.
- $C_{111,115,118,122}$ faulty
- $C_{112,114,120}$ faulty

Equalizer Amp.
- $R_{110,111,112,104,105}$ faulty

■Sound is distorted

Power Amp.
- Q_{106} faulty

D_{101} open

Tone Amp.
- $R_{136,139}$ faulty

Equalizer Amp.
- IC_{101} faulty
- $C_{106,107}$ faulty

Mic. Amp.
- $R_{310,390}$ faulty
- C_{308} faulty

■Oscillates

Power Amp.
- R_{165}, $C_{133,129}$ open

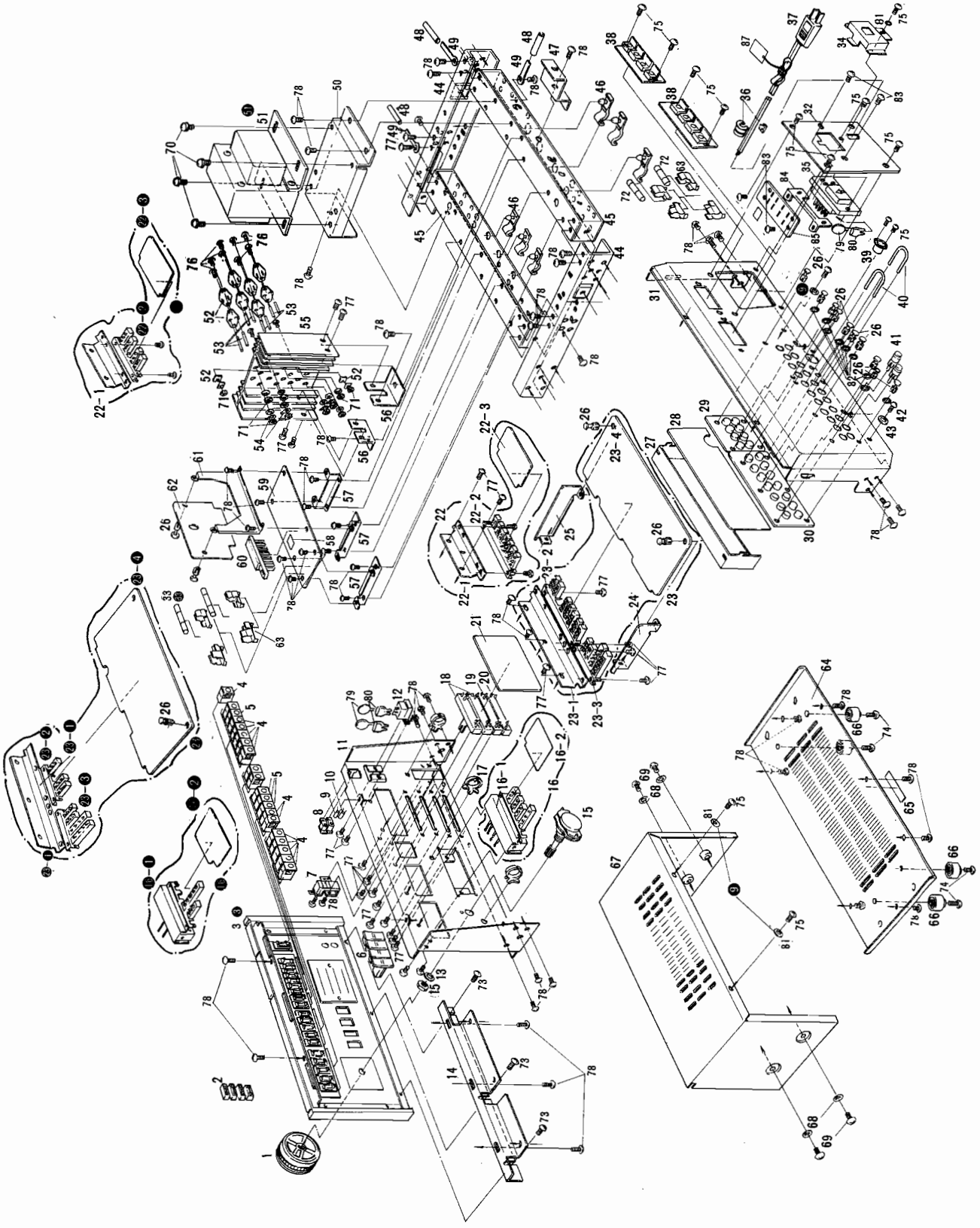
Tone Amp.
- $C_{113,119,121}$ faulty

Equalizer Amp.
- $C_{106,104,105}$ faulty
- $R_{109,106,107,110,111,112}$ open

Mic. Amp.
- $C_{307,306,304}$ faulty

■EXPLODED VIEW

⊙Main unit ◀MA-7800G・MA-7600G▶



⊙Numbers written in white(black background)are for parts exclusively for MA-7600G
Other numbers are for parts common to MA-7800G or parts exclusively for MA-7800G

■PARTS LIST:

⊙Main unit ◀MA-7800G・MA-7600G▶

⊙Numbers written in white(black background)are for parts exclusively for **MA-7600G**
parts without indication of model number are common to MA-7800G **and MA-7600G**

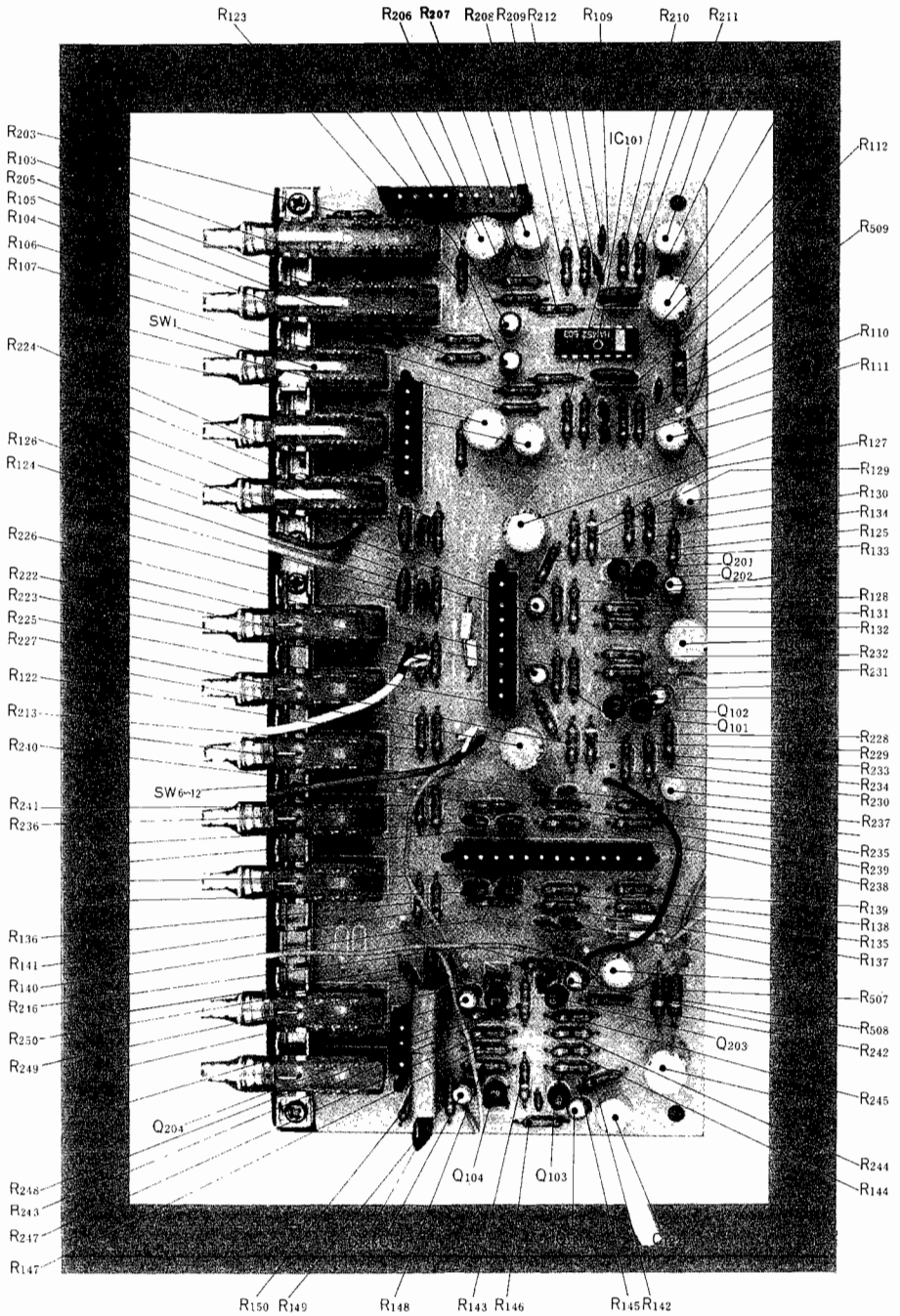
REF.NO.	PART NO	DESCRIPTION
1	380-3563-01	Knob
2	380-3564-00	Knob
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
4	382-0104-00	Button
5	382-0104-01	Button
6	380-3562-00	Knob
7	075-0109-00	Jack
8	345-2666-00	Rubber part
9	017-0320-06 MA-7800G	Pilotlamp
⑨	746-0660-00 MA-7600G	Special washer
10	017-0320-07	Pilotlamp
11	309-0275-01	Front plate
12	013-3156-03	Switch
13	745-0310-00	Special washer
14	330-5821-00	Pressed part
15	012-3474-00	Variable resistor
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
17	335-0787-00	Molded part
18	012-3476-00	Variable resistor
19	012-3510-00	Variable resistor
20	012-3475-00	Variable resistor
21	099-4531-00	P.W.B
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

REF.NO.	PART NO	DESCRIPTION
71	722-0320-00	Special nut
72	120-0015-00 MA-7800G	Fuse
73	737-3006-11	Sems screw
74	714-3020-81	Machine screw
75	702-3008-89	Tap-screw
76	714-3012-11	Machine screw
77	714-3006-11	Machine screw
78	702-3008-81	Tap-screw
79	043-0065-00	Special capacitor

REF.NO.	PART NO	DESCRIPTION
80	825-0199-00	Special tube
81	746-0660-00 MA-7800G	Special washer
82	746-0662-00	Special washer
83	714-3008-81	Machine screw
84	330-5912-00	Pressed part
85	099-4610-00	P.W.B
86	287-1314-00	Nameplate
87	285-0664-00	Guide label

■ELECTRIC PARTS

⊙EQ. TONE AMP P.W.B ◀MA-7800G▶



■PARTS LIST

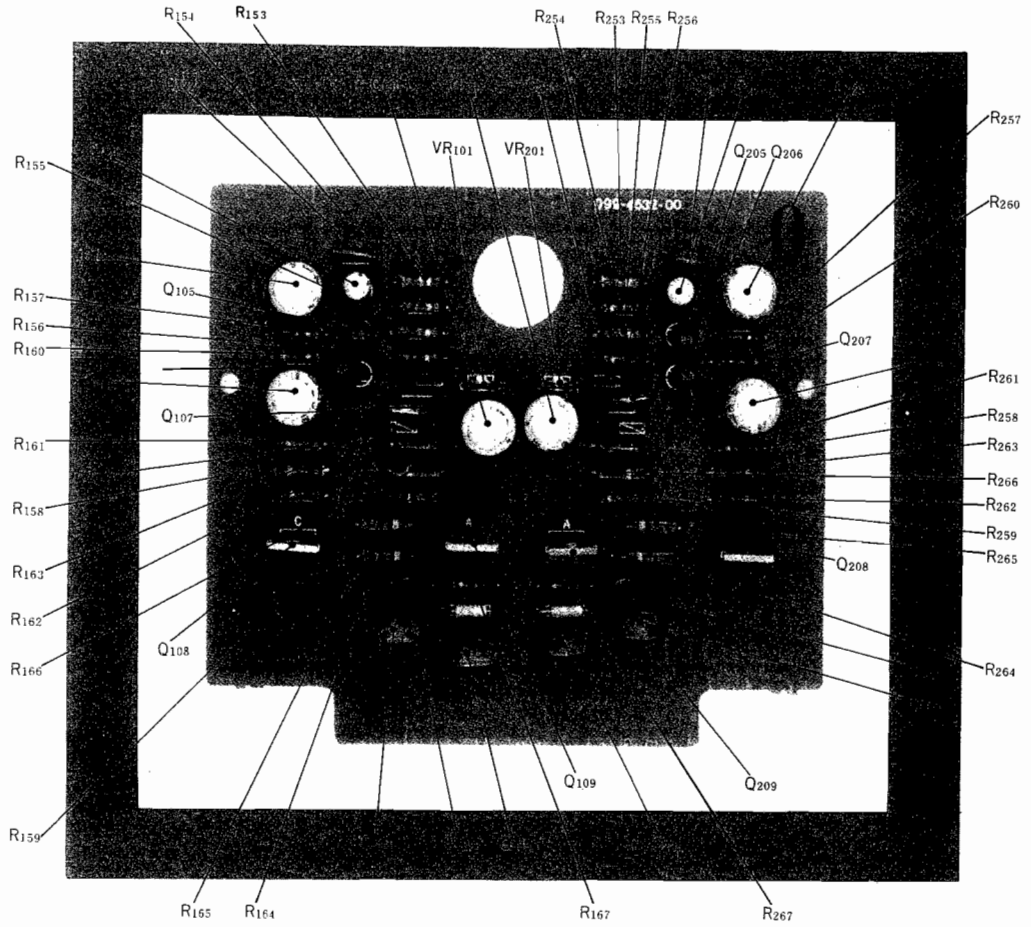
⊙EQ-TONE-AMP P.W.B ◀MA-7800G▶

REF.NO.	PART NO	DESCRIPTION
$Q_{101,103,104}^{201,203,204}$	100-0493-28	Transistor(2SC493GR)
$Q_{102,202}$	102-1000-28	Transistor(2SC1000GR)
IC_{101}	051-0054-00	IC
S_1	013-3252-00	Switch
S_6	013-3254-00	Switch
$C_{104,204}$	141-2221-12	Polyester capacitor (50V0.0022μF)
$C_{105,205}$	141-8221-12	Polyester capacitor (50V0.0082μF)
$C_{107,207}$	141-1022-12	Polyester capacitor (50V0.001μF)
$C_{117}^{116,216,217}$	141-1522-12	Polyester capacitor (50V0.0015μF)
$C_{219}^{118,119,218}$	141-2232-13	Polyester capacitor (50V0.022μF)
$C_{110,210}$	141-3332-13	Polyester capacitor (50V0.033μF)
$C_{125,225}$	141-2732-13	Polyester capacitor (50V0.027μF)
$C_{221,121}$	144-1002-12	Mica capacitor (50V10PF)
$C_{223}^{113,123,213}$	144-3302-12	Mica capacitor (50V33PF)
$C_{109,209}$	144-2012-15	Mica capacitor (50V200PF)
$C_{106,206}$	144-2412-17	Mica capacitor (50V240PF)
$C_{136,236}$	144-1512-14	Mica capacitor (50V150PF)
$C_{126,226}$	148-3341-12	ML capacitor (50V0.33μF)
$C_{114,214}$	180-4764-22	Electrolytic capacitor (10V47μF)
$C_{112,212}$	180-4764-42	Electrolytic capacitor (25V47μF)
$C_{208,222}^{108,122}$	180-1064-52	Electrolytic capacitor (35V10μF)
$C_{507,505,506}$	180-1074-52	Electrolytic capacitor (35V100μF)
$C_{102,202}$	180-2274-32	Electrolytic capacitor (16V220μF)
$C_{120,220}^{101,201}$	181-2253-62	Electrolytic capacitor (50V2.2μF)
$C_{111,211}$	181-2243-62	Electrolytic capacitor (50V0.22μF)
$C_{115,215}$	181-4753-62	Electrolytic capacitor (50V4.7μF)
$C_{103,203}$	181-1063-62	Electrolytic capacitor (50V10μF)
R_{509}	110-3311-41	Solid resistor (½W330Ω)
$R_{507,508}$	110-1511-41	Solid resistor (½W150Ω)

REF.NO.	PART NO	DESCRIPTION
$R_{133,233}$	111-1211-33	(Film resistor (¼W120Ω)
$R_{145,245}^{109,209}$	111-5611-33	(Film resistor (¼W560Ω)
$R_{147,247}^{134,234}$	111-8211-33	(Film resistor (¼W820Ω)
$R_{225,235,236}^{125,135,136}$	111-1021-33	(Film resistor (¼W1KΩ)
$R_{111,211}^{105,205}$	111-2221-33	(Film resistor (¼W2.2KΩ)
$R_{142,242}$	111-2721-33	(Film resistor (¼W2.7KΩ)
$R_{138,238}$	111-3321-33	(Film resistor (¼W3.3KΩ)
$R_{144,244}$	111-4721-33	(Film resistor (¼W4.7KΩ)
$R_{232,248,270}^{132,148,170}$	111-6821-33	(Film resistor (¼W6.8KΩ)
$R_{223,228,231}^{123,128,131}$	111-1231-33	(Film resistor (¼W12KΩ)
$R_{230,295,241}^{130,139,141}$	111-1831-33	(Film resistor (¼W18KΩ)
$R_{113,213}^{107,207}$	111-2231-33	(Film resistor (¼W22KΩ)
$R_{110,210}$	111-3031-33	(Film resistor (¼W30KΩ)
$R_{149,249}^{146,246}$	111-5631-33	(Film resistor (¼W56KΩ)
$R_{106,206}$	111-8231-33	(Film resistor (¼W82KΩ)
$R_{122,222}$	111-1041-33	(Film resistor (¼W100KΩ)
$R_{143,243}$	111-1541-33	(Film resistor (¼W150KΩ)
$R_{126,226}$	111-2741-33	(Film resistor (¼W270KΩ)
$R_{112,212}$	111-3341-33	(Film resistor (¼W330KΩ)
$R_{127,227}$	111-4741-33	(Film resistor (¼W470KΩ)
$R_{140,240}^{137,237}$	111-1051-33	(Film resistor (¼W1MΩ)
$R_{208,224,229}^{108,124,129}$	111-1531-33	(Film resistor (¼W15KΩ)
$R_{104,204}$	111-2241-33	(Film resistor (¼W220KΩ)
$R_{129,229}$	111-9111-33	(Film resistor (¼W910Ω)
	076-0137-06	Plug(6P)
	076-0137-08	Plug(8P)
	076-0137-12	Plug(12P)
	076-0137-03	Plug(3P)

■ELECTRIC PARTS

⊙MAIN AMP P.W.B ◀MA-7800G▶



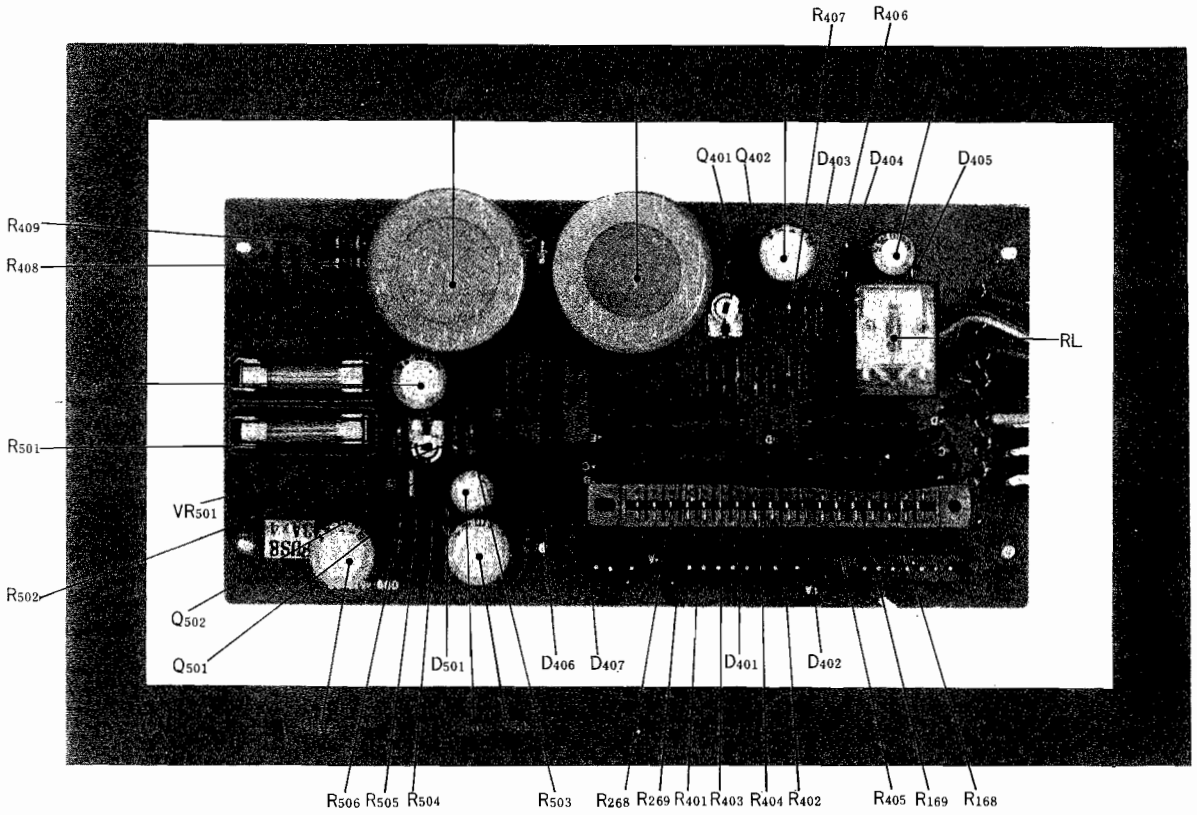
■PARTS LIST:

⊙MAIN AMP P.W.B ◀MA-7800G▶

REF.NO.	PART NO	DESCRIPTION
$Q_{109,209}$	100-0815-25	Transistor (2SA815Y)
$Q_{106,206}^{105,205}$	100-0841-28	Transistor (2SA841GR)
$Q_{108,208}$	102-1625-25	Transistor (2SC1625Y)
$Q_{107,207}$	102-1628-25	Transistor (2SC1628Y)
$D_{101,201}$	001-0138-00	Diode (STV3H-0)
$C_{133,233}$	141-1532-13	Polyester capacitor (50V0.015μF)
$C_{134,234}^{135,235}$	141-1042-15	Polyester capacitor (50V0.1μF)
$C_{131,231}$	144-4702-12	Mica capacitor (50V47PF)
$C_{127,227}$	144-1012-14	Mica capacitor (50V100PF)
$C_{129,229}$	180-1064-22	Electrolytic capacitor (10V10μF)
$C_{128,228}$	180-4764-52	Electrolytic capacitor (35V47μF)
$C_{132,232}^{130,230}$	180-4764-02	Electrolytic capacitor (50V47μF)
$R_{166,266}^{163,263}$	110-1001-41	Solid resistor (½W10Ω)
$R_{165,265}^{154,264}$	110-2211-41	Solid resistor (½W220Ω)
$R_{158,258}$	111-2221-33	Film resistor (¼W2.2KΩ)
$R_{167,260}$	111-1001-33	Film resistor (¼W10Ω)
$R_{156,256}$	111-1021-33	Film resistor (¼W1KΩ)
$R_{181,261}^{154,254}$	111-2721-33	Film resistor (¼W2.7KΩ)
$R_{160,260}$	111-4721-33	Film resistor (¼W4.7KΩ)
$R_{162,262}$	111-5621-33	Film resistor (¼W5.6KΩ)
$R_{157,257}$	111-2231-33	Film resistor (¼W22KΩ)
$R_{155,255}^{159,259}$	111-5631-33	Film resistor (¼W56KΩ)
$R_{171,271}$	111-3011-33	Film resistor (¼W300Ω)
$R_{153,253}$	111-4741-33	Film resistor (¼W470KΩ)
$VR_{101,201}$	012-3364-00	Variable resistor

■ELECTRIC PARTS

⊙POWER SUPPLY P.W.B ◀MA-7800G▶



■PARTS LIST

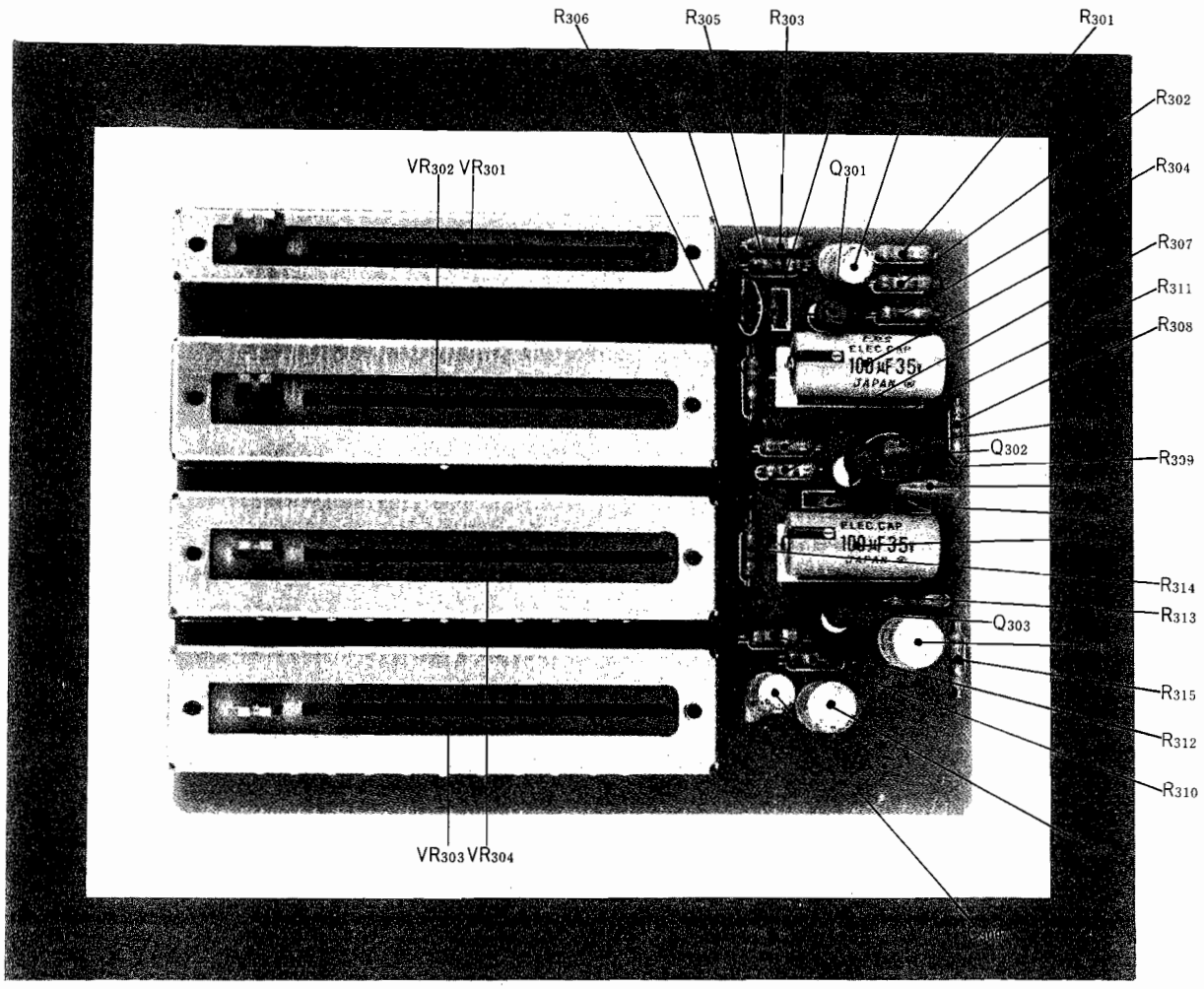
⊙POWER SUPPLY P.W.B ◀MA-7800G▶

REF.NO.	PART NO	DESCRIPTION
Q_{401}	102-0373-00	Transistor(2SC373)
Q_{502}	102-0495-25	Transistor(2SC495Y)
Q_{501}	102-0734-25	Transistor(2SC734Y)
Q_{402}	102-0732-25	Transistor(2SC732Y)
$D_{401\text{-}402\text{-}403}$	001-0010-00	Diode(1N34A)
$D_{404\text{-}405}$	001-0077-00	Diode(10D4)
D_{501}	001-0099-01	Diode(HZ7B)
D_{406}	001-0121-00	Diode(ESACO203C)
D_{407}	001-0121-01	Diode(ESACO203N)
D_{502}	001-0141-00	Diode(1S2371A)
VR_{501}	012-2700-00	Variable resistor
	014-0424-00	Relay
	076-0137-03	Plug (3P)
	076-0137-08	Plug (8P)
C_{401}	180-1084-12	Electrolytic capacitor (6.3V1000μF)
C_{503}	180-2274-62	Electrolytic capacitor (50V220μF)
C_{402}	180-3374-32	Electrolytic capacitor (16V330μF)
C_{502}	180-1074-52	Electrolytic capacitor (35V100μF)

REF.NO.	PART NO	DESCRIPTION
C_{501}	180-2274-52	Electrolytic capacitor (35V220μF)
C_{504}	180-3374-62	Electrolytic capacitor (50V330μF)
$C_{403\text{-}404}$	042-0209-00	Special capacitor (50V6800μF)
R_{506}	110-3301-41	Solid resistor (½W33Ω)
$R_{405\text{-}409}$	110-4721-41	Solid resistor (½W4.7KΩ)
R_{407}	111-8221-33	Film resistor (¼W8.2KΩ)
R_{502}	111-1021-33	Film resistor (¼W1KΩ)
R_{505}	111-2721-33	Film resistor (¼W2.7KΩ)
R_{503}	111-4721-33	Film resistor (¼W4.7KΩ)
$R^{501\text{-}401\text{-}402\ 403\text{-}404}$	111-5621-33	Film resistor (¼W5.6KΩ)
R_{405}	111-3031-33	Film resistor (¼W30KΩ)
R_{406}	111-2731-33	Film resistor (¼W27KΩ)
$R^{169\text{-}168\ 269\text{-}268}$	114-4782-71	Film resistor (3W0.47Ω)
R_{504}	111-1821-33	Film resistor (¼W1.8KΩ)
R_{411}	111-1531-33	Film resistor (¼W15KΩ)
R_{410}	111-1831-33	Film resistor (¼W18KΩ)
C_{407}	141-1532-13	Polyester capacitor (50V0.015μF)

■ELECTRIC PARTS

⊙MIC AMP P.W.B ◀MA-7800G・MA-7600G▶



■PARTS LIST

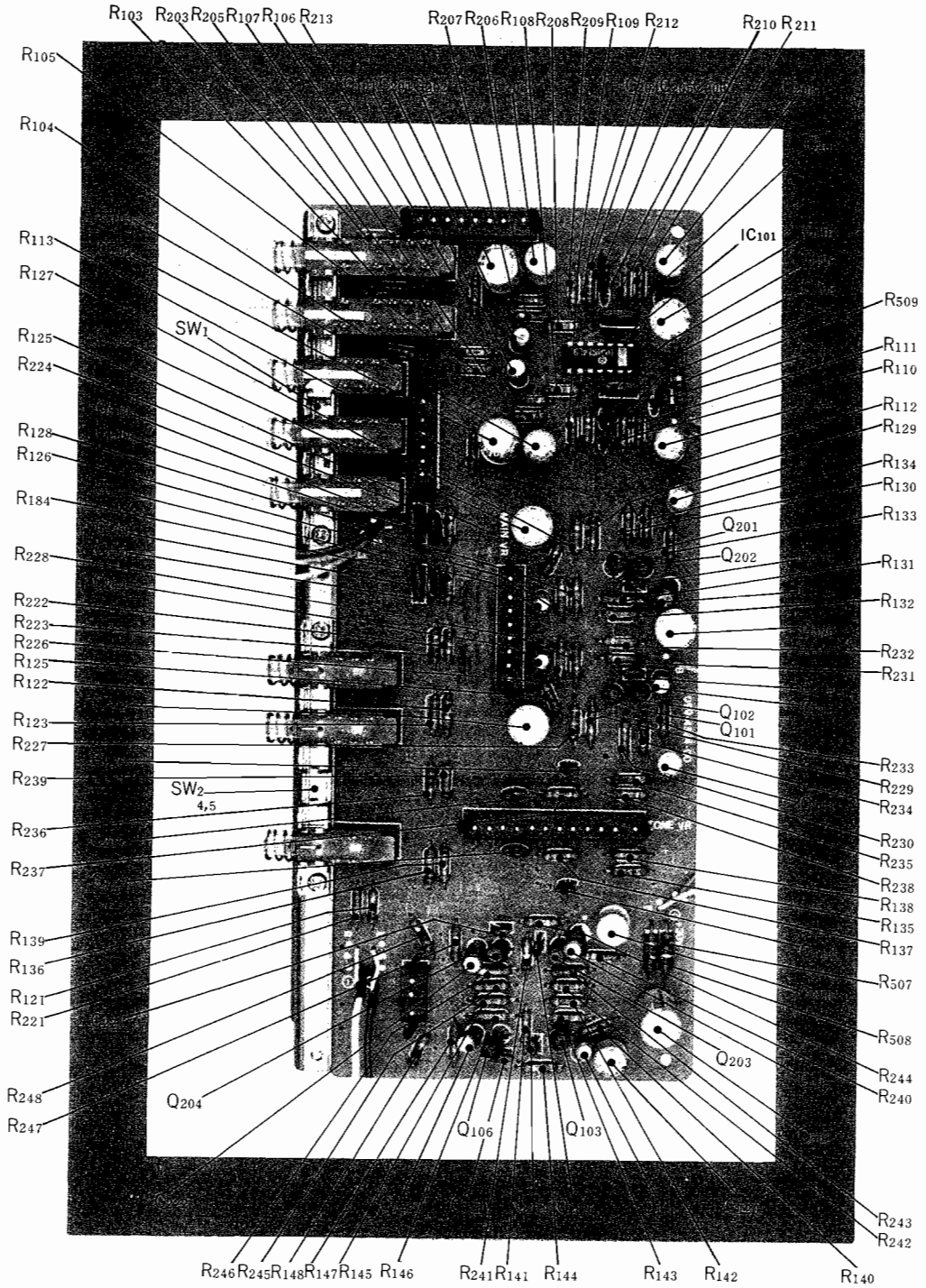
⊙MIC AMP P.W.B ◀MA-7800G・MA-7600G▶

REF.NO.	PART NO	DESCRIPTION
$Q_{301,302,303}$	102-1000-28	Transistor(2SC1000GR)
VR_{301}	012-3475-00	Variable resistor (MIC)
VR_{302}	012-3510-00	Variable resistor (BALANCE)
$VR_{303,304}$	012-3476-00	Variable resistor (BASS, TREBLE)
$R_{301,306}$	111-3321-33	Film resistor (¼W3.3KΩ)
R_{302}	111-8241-33	Film resistor (¼W820KΩ)
R_{303}	111-3331-33	Film resistor (¼W33KΩ)
R_{304}	111-4731-33	Film resistor (¼W47KΩ)
R_{305}	111-1021-33	Film resistor (¼W1KΩ)
R_{308}	111-2221-33	Film resistor (¼W2.2KΩ)
$R_{307,309}$	111-1841-33	Film resistor (¼W180KΩ)
R_{310}	111-6831-33	Film resistor (¼W68KΩ)

REF.NO.	PART NO	DESCRIPTION
R_{311}	111-3941-33	Film resistor (¼W390KΩ)
R_{312}	111-3911-33	Film resistor (¼W390Ω)
R_{313}	111-5621-33	Film resistor (¼W5.6KΩ)
R_{314}	111-8211-33	Film resistor (¼W820Ω)
R_{315}	111-1511-33	Film resistor (¼W150Ω)
C_{301}	180-4754-52	Electrolytic capacitor (35V4.7μF)
C_{303}	180-1074-52	Electrolytic capacitor (35V100μF)
$C_{308,310}$	180-1064-52	Electrolytic capacitor (35V10μF)
C_{309}	180-4764-22	Electrolytic capacitor (10V47μF)
$C_{302,306}$	144-4702-12	Mica capacitor (50V47PF)
$C_{304,305}$	141-4732-14	Polyester capacitor (50V0.047μF)
C_{307}	144-2012-15	Mica capacitor (50V200PF)

■ELECTRIC PARTS

⊙EQ. TONE AMP P.W.B ◀MA-7600G▶



■PARTS LIST

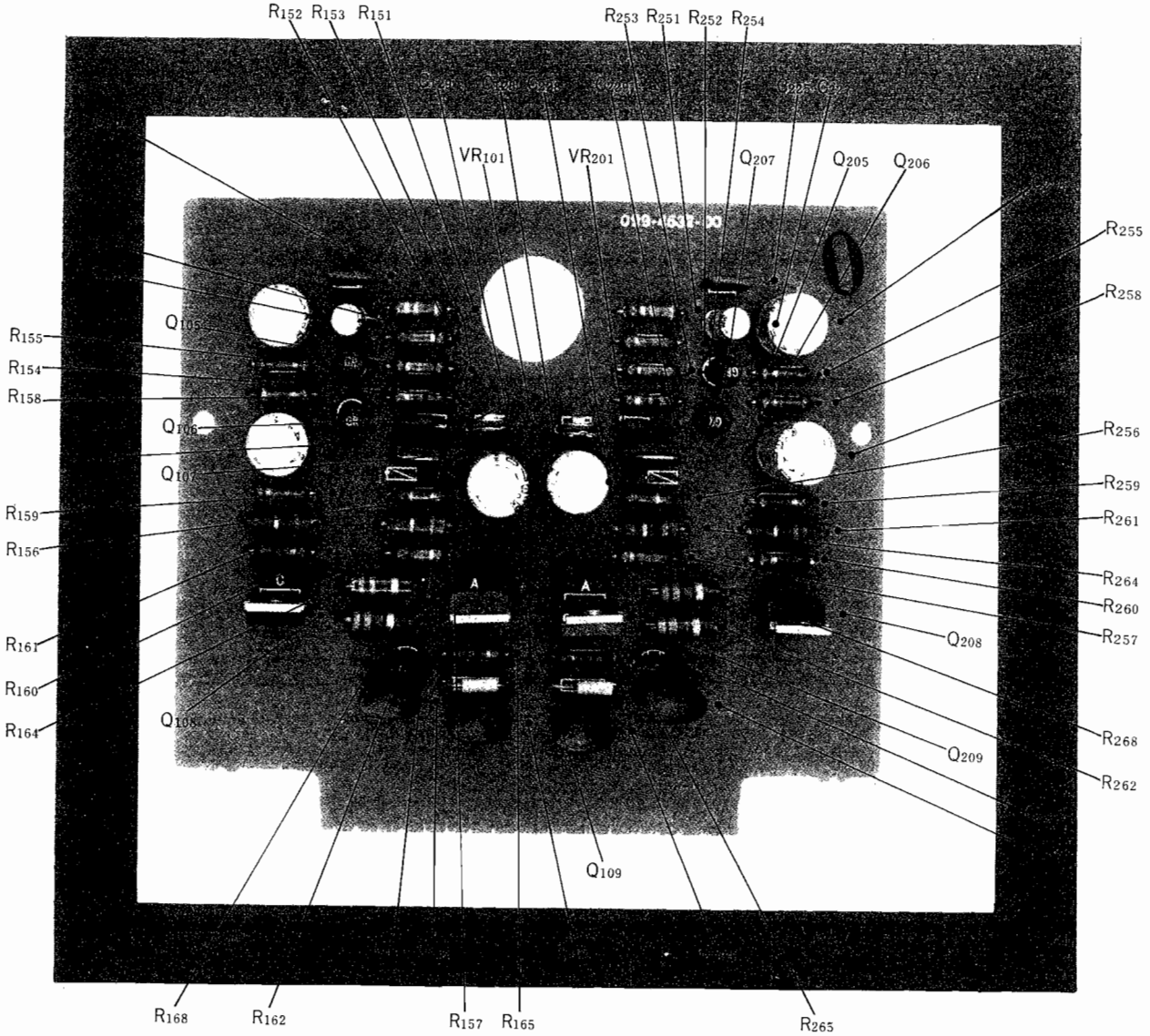
⊙EQ. TONE AMP P.W.B ◀MA-7600G▶

REF.NO.	PART NO.	DESCRIPTION
$Q_{101,103,104}^{201,203,204}$	100-0493-28	Transistor(2SA493GR)
$Q_{102,202}$	102-1000-28	Transistor(2SC1000GR)
IC_{101}	051-0054-00	IC
SW_1	013-3252-00	Switch
SW_2	013-3257-00	Switch
$C_{104,204}$	141-2221-12	Polyestor capacitor (50V0.0022μF)
$C_{105,205}$	141-8221-12	Polyestor capacitor (50V0.0082μF)
$C_{107,207}$	141-1022-12	Polyestor capacitor (50V0.001μF)
$C_{116,216}$	141-3322-12	Polyestor capacitor (50V0.0033μF)
$C_{117,217}$	141-2232-13	Polyestor capacitor (50V0.022μF)
$C_{110,210}$	141-3332-13	Polyestor capacitor (50V0.033μF)
$C_{119,219}$	144-1002-12	Mica capacitor (50V10PF)
$C_{121,227}^{113,213}$	144-3302-12	Mica capacitor (50V33PF)
$C_{106,206}$	144-2412-17	Mica capacitor (50V240PF)
$C_{109,209}$	144-2012-15	Mica capacitor (50V200PF)
$C_{133,233}$	144-1512-14	Mica capacitor (50V150PF)
$C_{114,214}$	180-4764-22	Electrolytic capacitor (10V47μF)
$C_{112,212}$	180-4764-42	Electrolytic capacitor (25V47μF)
$C_{208,220}^{108,120}$	180-1064-52	Electrolytic capacitor (35V10μF)
$C_{507,505,506}$	180-1074-52	Electrolytic capacitor (35V100μF)
$C_{102,202}$	180-2274-32	Electrolytic capacitor (16V220μF)
$C_{201,218}^{101,118}$	181-2253-62	Electrolytic capacitor (50V2.2μF)
$C_{115,215}$	181-4753-62	Electrolytic capacitor (50V4.7μF)
$C_{103,203}$	181-1063-62	Electrolytic capacitor (50V10μF)
$C_{111,211}$	181-2243-62	Electrolytic capacitor (50V0.22μF)
$R_{507,508}$	110-1511-41	Solid resistor (½W150Ω)
$R_{133,233}$	111-1211-33	Film resistor (¼W120Ω)

REF.NO.	PART NO.	DESCRIPTION
$R_{143,243}^{109,209}$	111-5611-33	Film resistor (¼W560Ω)
$R_{145,245}^{134,234}$	111-8211-33	Film resistor (¼W820Ω)
$R_{225,235,236}^{125,135,136}$	111-1021-33	Film resistor (¼W1KΩ)
$R_{111,211}^{105,205}$	111-2221-33	Film resistor (¼W2.2KΩ)
$R_{140,240}$	111-2721-33	Film resistor (¼W2.7KΩ)
$R_{137,237}$	111-3321-33	Film resistor (¼W3.3KΩ)
$R_{142,242}$	111-4721-33	Film resistor (¼W4.7KΩ)
$R_{146,246}^{132,232}$	111-6821-33	Film resistor (¼W6.8KΩ)
$R_{221,223,228}^{121,123,128}$	111-1231-33	Film resistor (¼W12KΩ)
$R_{230,238,239}^{130,138,139}$	111-1831-33	Film resistor (¼W18KΩ)
$R_{113,213}^{107,207}$	111-2231-33	Film resistor (¼W22KΩ)
$R_{110,210}$	111-3031-33	Film resistor (¼W30KΩ)
$R_{147,247}^{144,244}$	111-5631-33	Film resistor (¼W56KΩ)
$R_{106,206}$	111-8231-33	Film resistor (¼W82KΩ)
$R_{122,222}$	111-1041-33	Film resistor (¼W100KΩ)
$R_{141,241}$	111-1541-33	Film resistor (¼W150KΩ)
$R_{126,226}$	111-2741-33	Film resistor (¼W270KΩ)
$R_{112,212}$	111-3341-33	Film resistor (¼W330KΩ)
$R_{127,227}$	111-4741-33	Film resistor (¼W470KΩ)
$R_{124,224}^{108,208}$	111-1531-33	Film resistor (¼W15KΩ)
$R_{104,204}$	111-2241-33	Film resistor (¼W220KΩ)
$R_{129,229}$	111-9111-33	Film resistor (¼W910Ω)
	076-0137-03	Plug(3P)
	076-0137-06	Plug(6P)
	076-0137-08	Plug(8P)
	076-0137-12	Plug(12P)

■ELECTRIC PARTS

⊙MAIN AMP P.W.B ◀MA-7600G▶



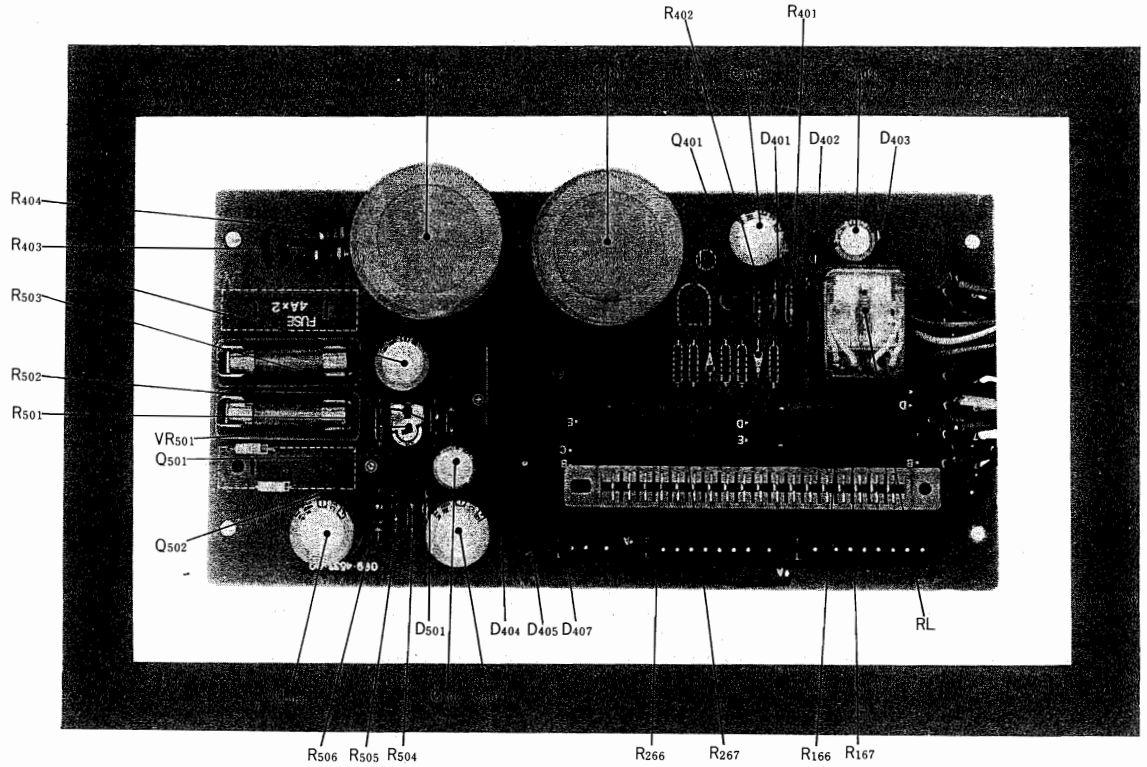
■PARTS LIST

⊙MAIN AMP P.W.B ◀MA-7600G▶

REF.NO.	PART NO	DESCRIPTION
$Q_{109,209}$	100-0816-25	Transistor(2SA816Y)
$Q^{105,106}_{205,206}$	100-0842-28	Transistor(2SA842GR)
$Q_{108,208}$	102-1626-25	Transistor(2SC1626Y)
$Q_{107,207}$	102-1628-15	Transistor(2SC1628O)
$D_{101,201}$	001-0138-00	Diode(STV3H-D)
$C^{132,133}_{232,233}$	141-1042-15	Polyestor capacitor (50V0.1 μF)
$C_{131,231}$	141-1532-13	Polyestor capacitor (50V0.015 μF)
$C_{129,229}$	144-4702-12	Mica capacitor (50V47PF)
$C_{125,225}$	144-1012-14	Mica capacitor (50V100PF)
$C_{127,227}$	180-1064-22	Electrolytic capacitor (10V10 μF)
$C_{126,226}$	180-4764-52	Electrolytic capacitor (35V47 μF)
$C^{230,228}_{130,128}$	180-4764-62	Electrolytic capacitor (50V47 μF)
$R^{168,162}_{268,262}$	110-3311-41	Solid resistor (½W330Ω)
$R^{161,164}_{261,264}$	110-1501-41	Solid resistor (½W15Ω)
$R_{151,251}$	111-4741-33	Film resistor (¼W470KΩ)
$R^{152,252}_{159,259}$	111-2721-33	Film resistor (¼W2.7KΩ)
$R^{153,253}_{150,257}$	111-5631-33	Film resistor (¼W56KΩ)
$R_{155,255}$	111-2231-33	Film resistor (¼W22KΩ)
$R_{154,254}$	111-1021-33	Film resistor (¼W1KΩ)
$R_{153,258}$	111-4721-33	Film resistor (¼W4.7KΩ)
$R_{169,269}$	111-1511-33	Film resistor (¼W150Ω)
$R_{156,256}$	111-2421-33	Film resistor (¼W2.4KΩ)
$R_{160,260}$	111-2221-33	Film resistor (¼W2.2KΩ)
$R_{165,265}$	111-1001-33	Film resistor (¼W10Ω)
$VR_{101,201}$	012-3364-00	Variable resistor

■ELECTRIC PARTS

⊙POWER SUPPLY P.W.B ◀MA-7600G▶



■PARTS LIST

⊙POWER SUPPLY P.W.B ◀MA-7600G▶

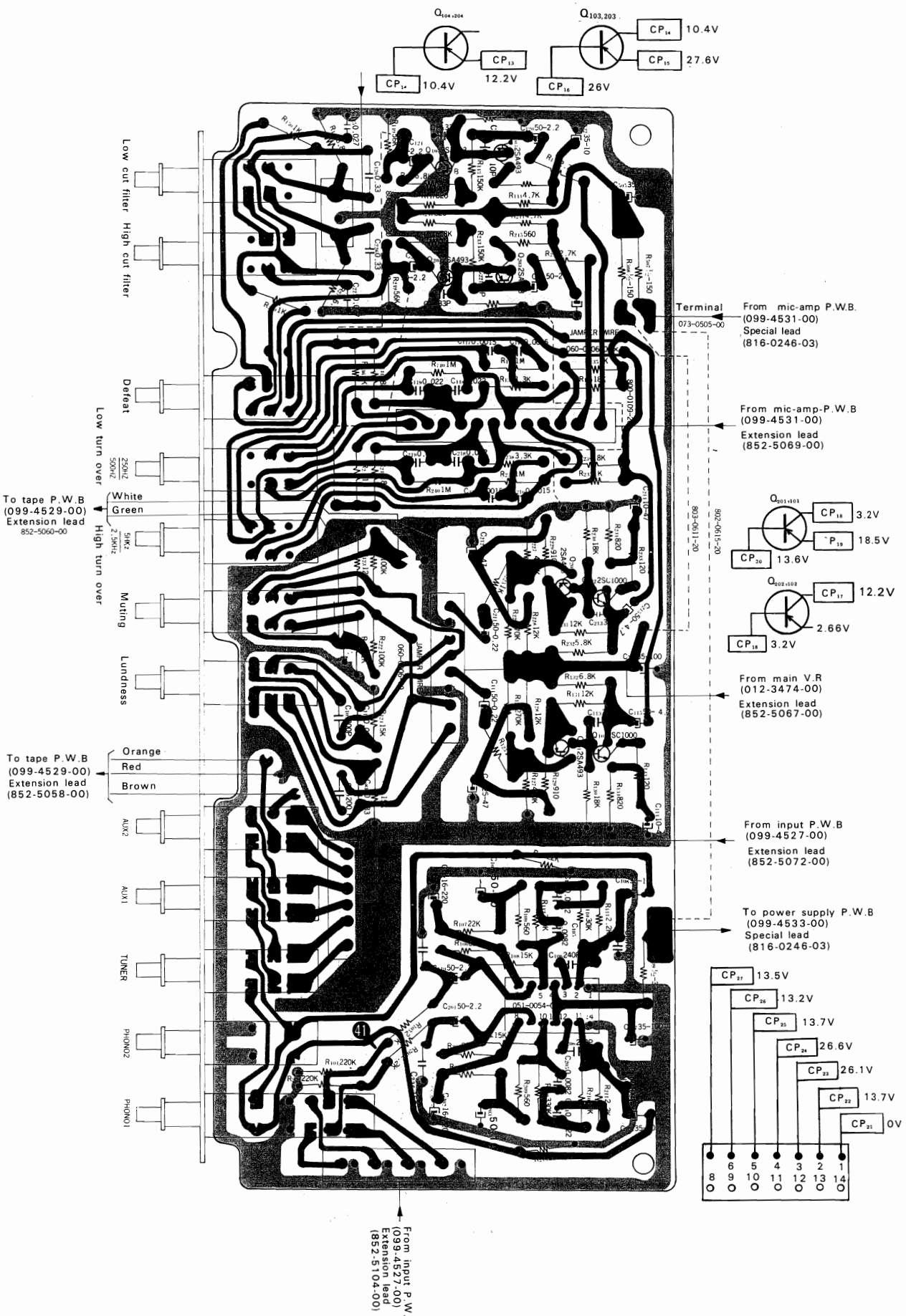
REF.NO.	PART NO	DESCRIPTION
Q_{502}	102-0495-25	Transistor(2SC495Y)
Q_{501}	102-0734-25	Transistor(2SC734Y)
Q_{401}	102-0732-25	Transistor(2SC732Y)
D_{401}	001-0010-00	Diode(1N34A)
$D_{402,403}$	001-0077-00	Diode(10D4)
D_{501}	001-0099-01	Diode(HZ7B)
D_{404}	001-0121-00	Diode(ESAC0203C)
D_{405}	001-0121-01	Diode(ESAC0203N)
D_{502}	001-0141-00	Diode(1S2371A)
VR_{501}	012-2700-00	Variable resistor
	014-0419-00	Relay
	076-0137-03	Plug(3P)
	076-0137-08	Plug(8P)
C_{401}	180-1084-12	Electrolytic capacitor (6.3V1000μF)
C_{502}	180-1074-52	Electrolytic capacitor (35V100μF)

REF.NO.	PART NO	DESCRIPTION
C_{501}	180-2274-52	Electrolytic capacitor (35V220μF)
C_{402}	180-2274-32	Electrolytic capacitor (16V220μF)
C_{503}	180-2274-62	Electrolytic capacitor (50V220μF)
$C_{403,404}$	042-0183-01	Special capacitor (50V4700μF)
C_{504}	180-3374-62	Electrolytic capacitor (50V330μF)
R_{506}	110-3301-41	Solid resistor (½W33Ω)
$R_{403,404}$	110-4721-41	Solid resistor (½W4.7KΩ)
R_{402}	111-8291-33	Film resistor (¼W8.2Ω)
R_{502}	111-1021-33	Film resistor (¼W1KΩ)
R_{505}	111-2721-33	Film resistor (¼W2.7KΩ)
R_{503}	111-4721-33	Film resistor (¼W4.7KΩ)
R_{501}	111-5621-33	Film resistor (¼W5.6KΩ)
R_{401}	111-2731-33	Film resistor (¼W27KΩ)
$R_{166,167,266,267}$	114-4782-71	Film resistor (3 W0.47Ω)
R_{504}	111-1821-33	Film resistor (¼W1.8KΩ)

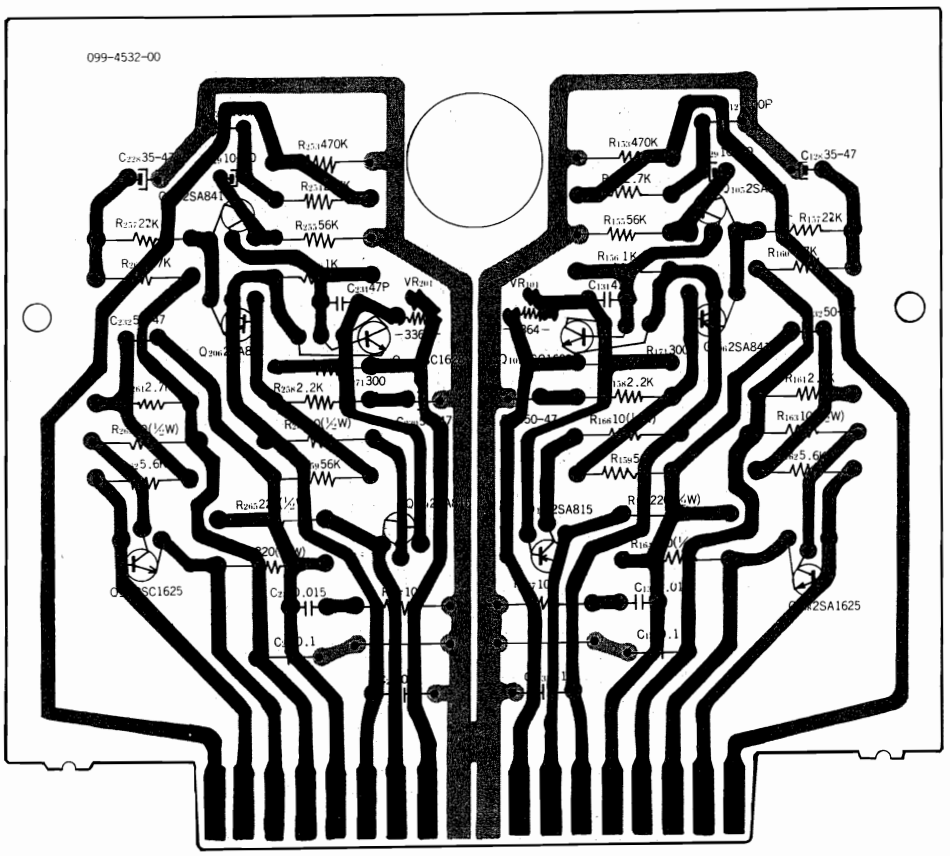
■PRINTED WIRING BOARD

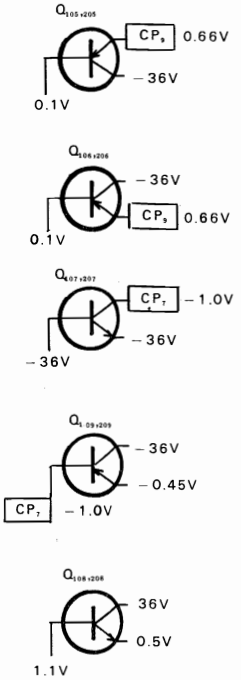
⊙EQ. TONE AMP P.W.B ◀MA-7800G▶

● Mark is for check point

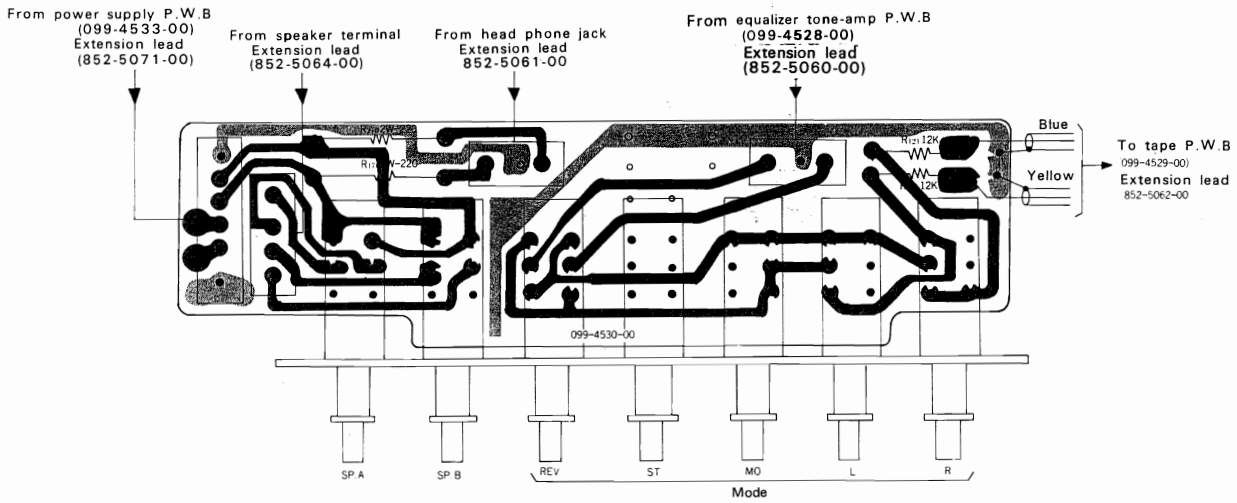


⊙MAIN AMP P.W.B ◀MA-7800G▶



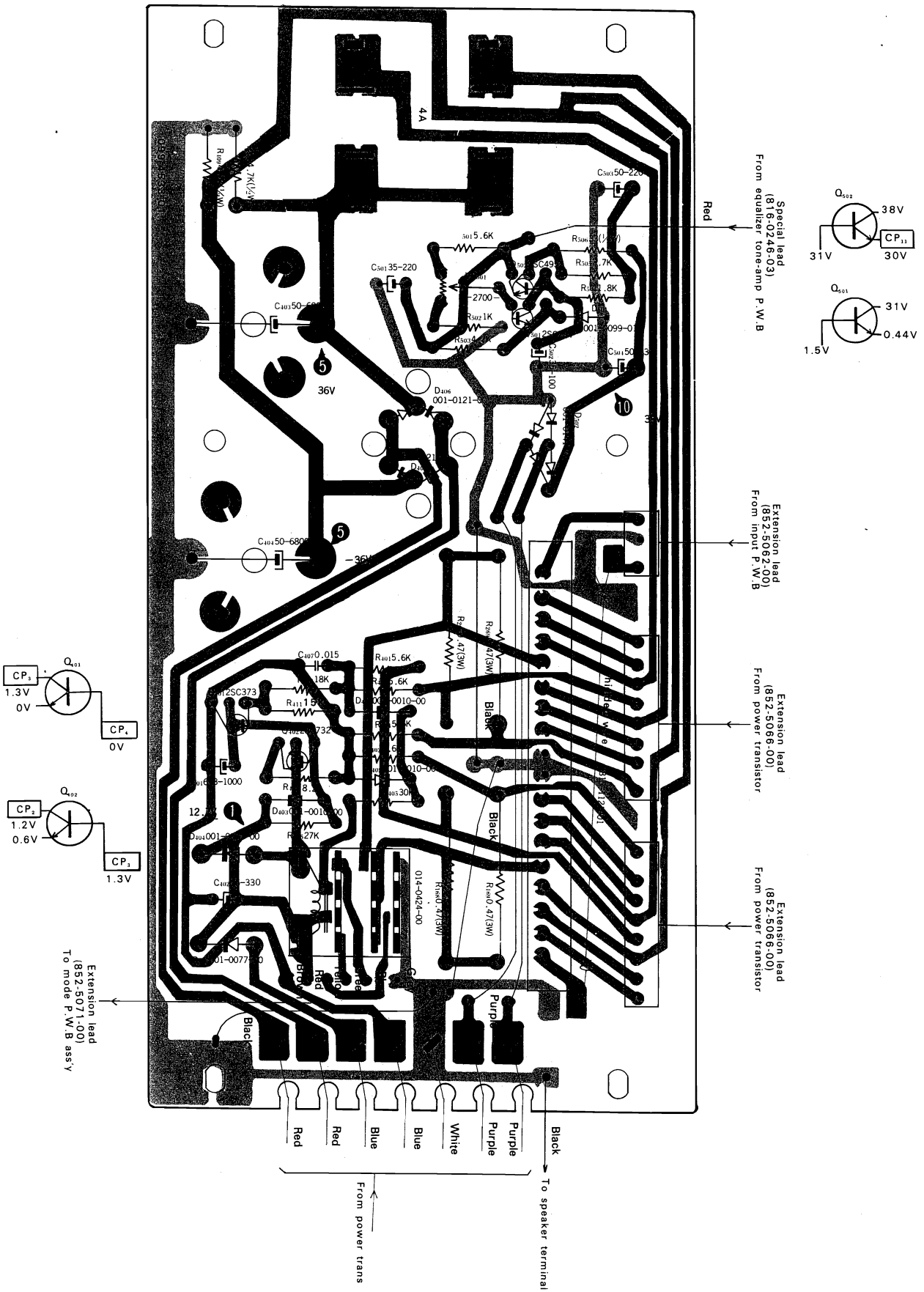


⊙MODE P.W.B ◀MA-7800G▶

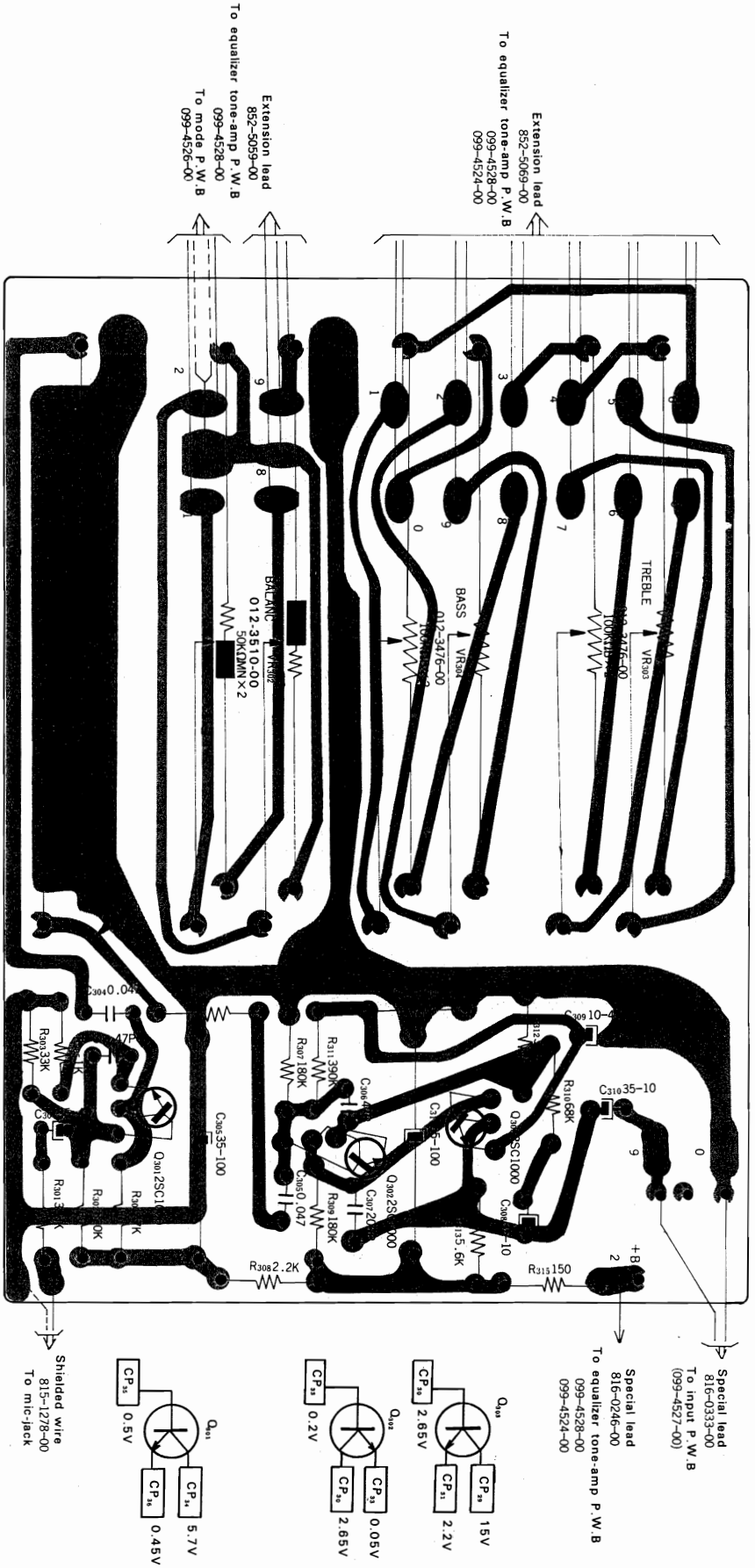


⊙POWER SUPPLY P.W.B ◀MA-7800G▶

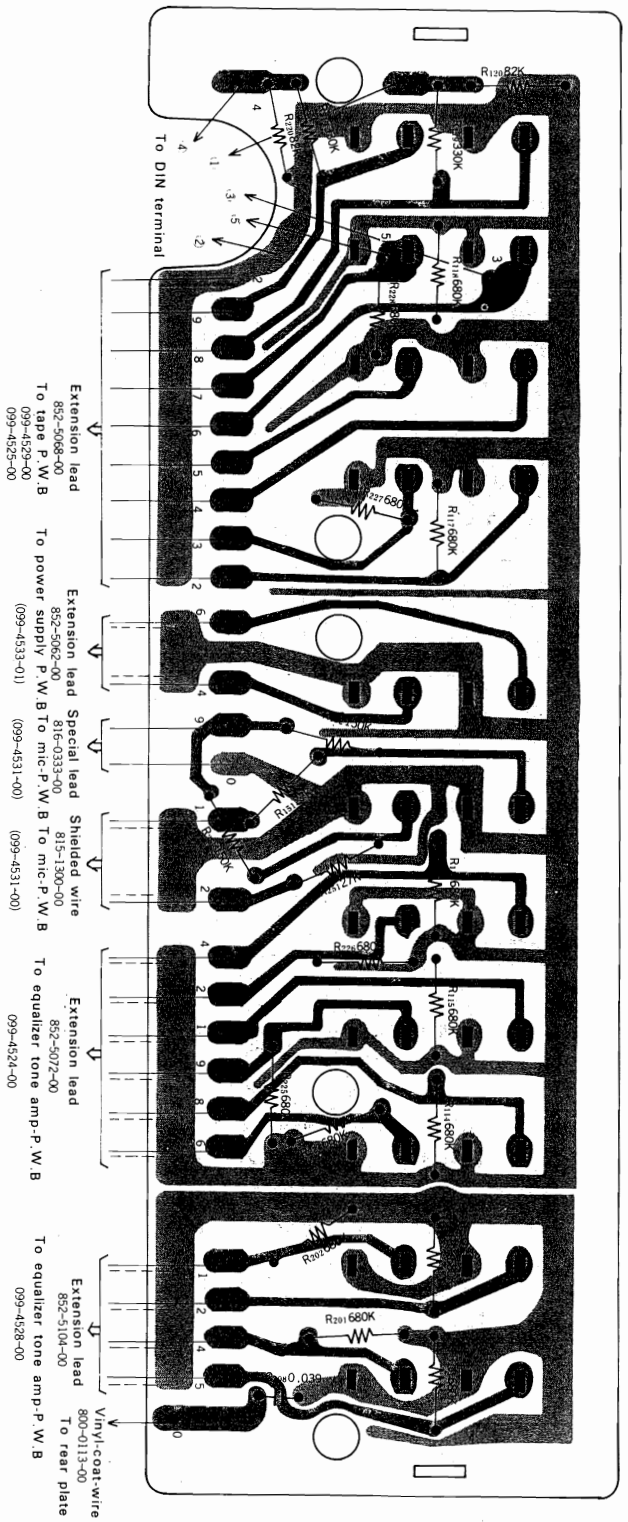
● Mark is for check point



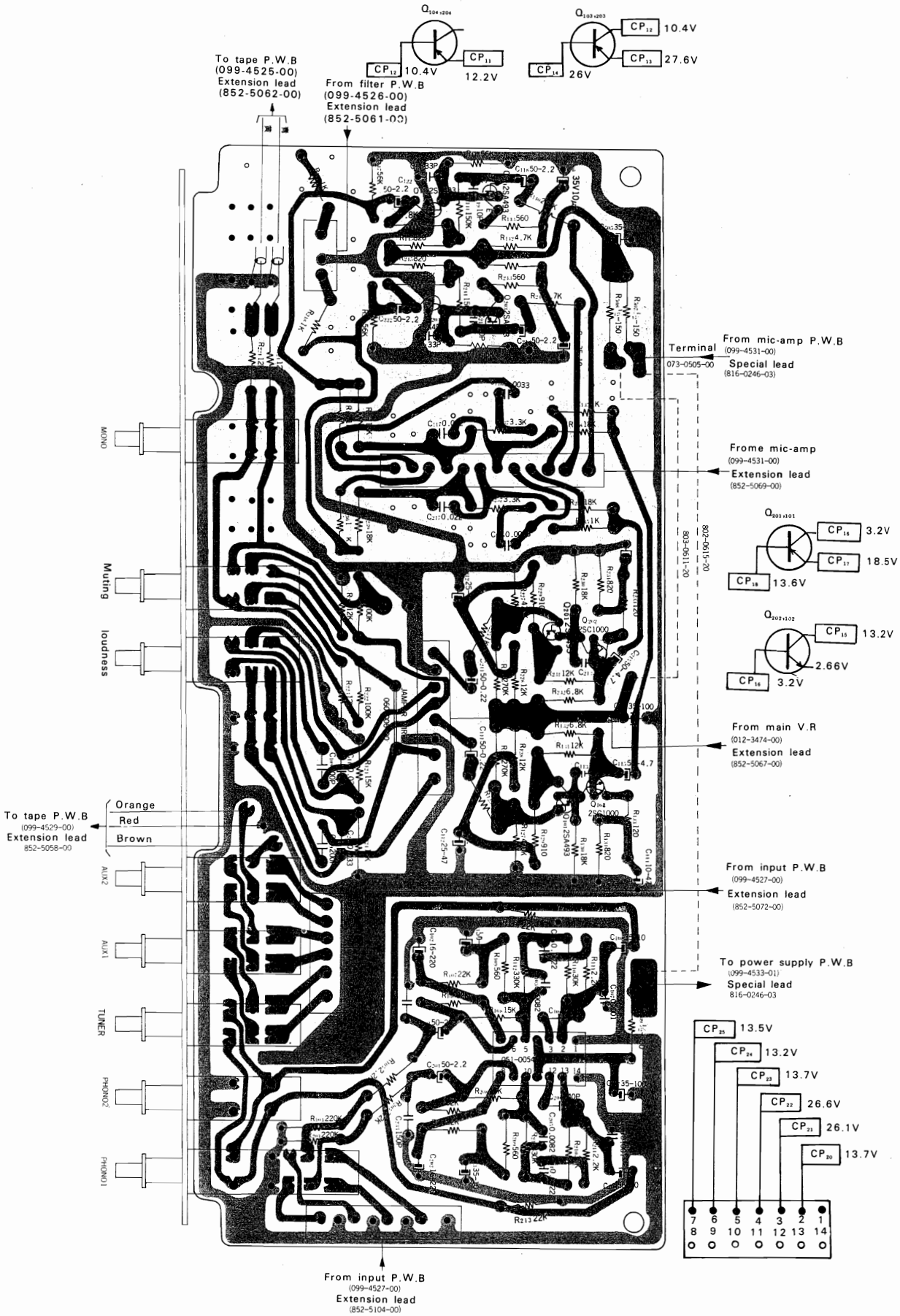
⊙MIC AMP P.W.B ◀MA-7800G・MA-7600G▶



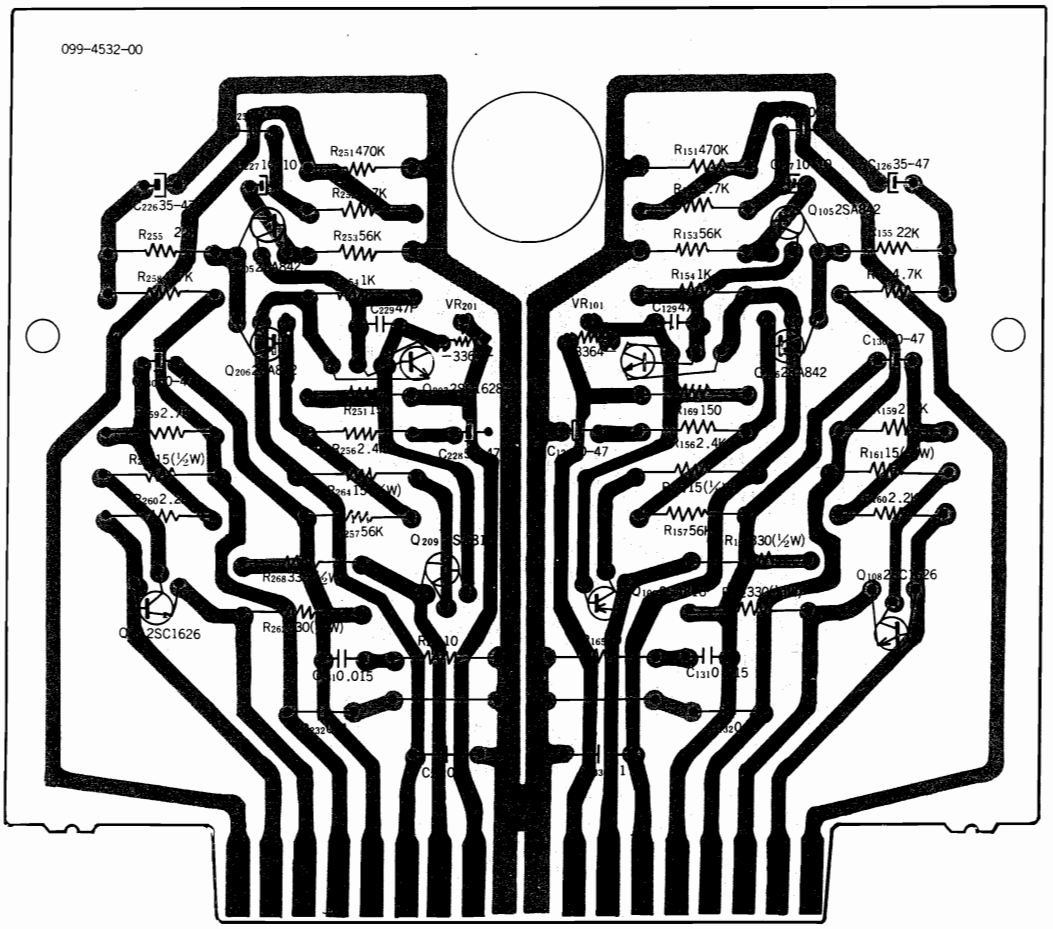
⊙INPUT P.W.B ◀MA-7800G・MA-7600G▶

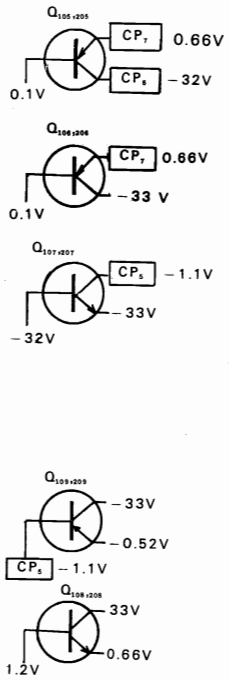


⊙EQ. TONE AMP P.W.B ◀MA-7600G▶



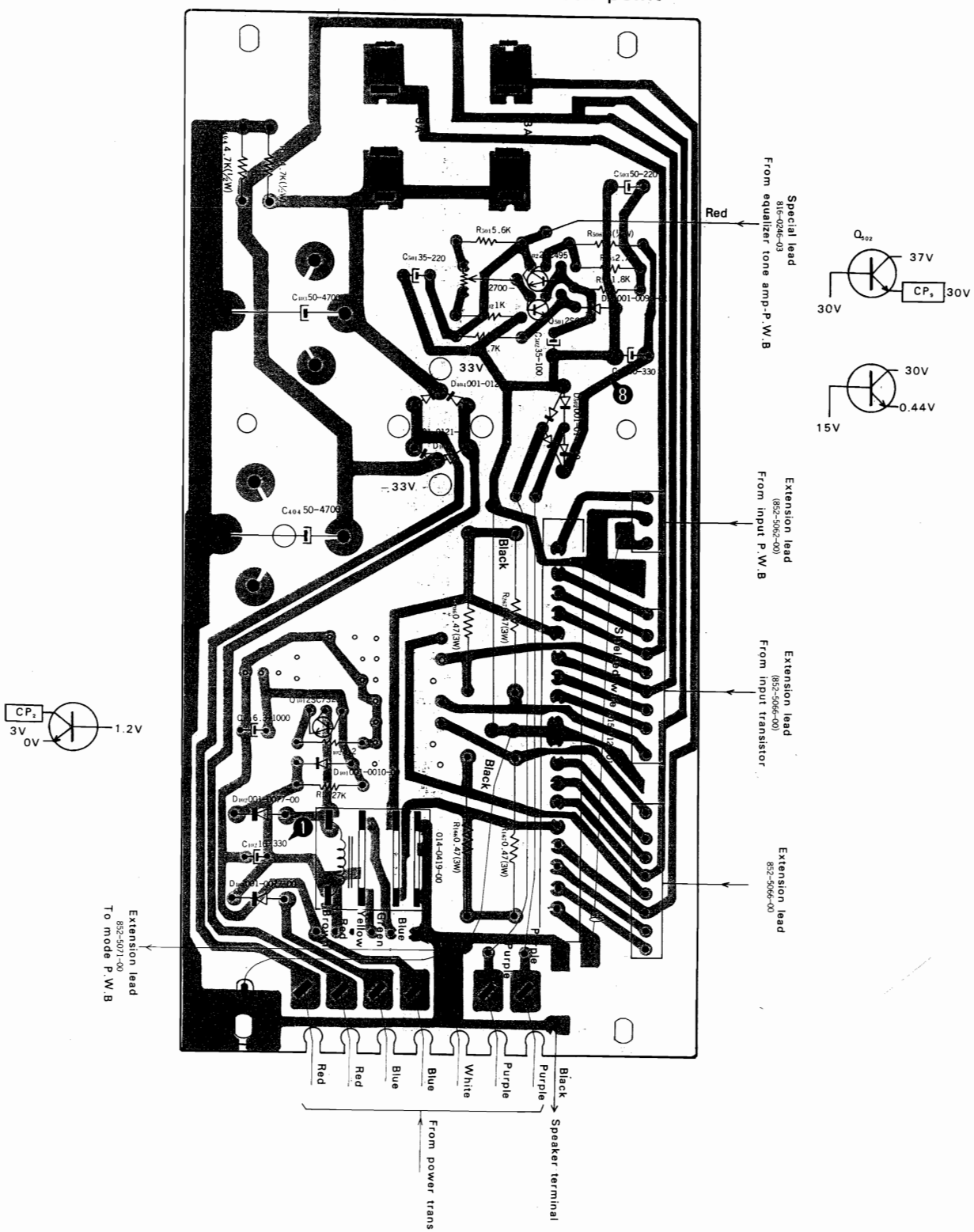
⊙MAIN AMP P.W.B ◀MA-7600G▶



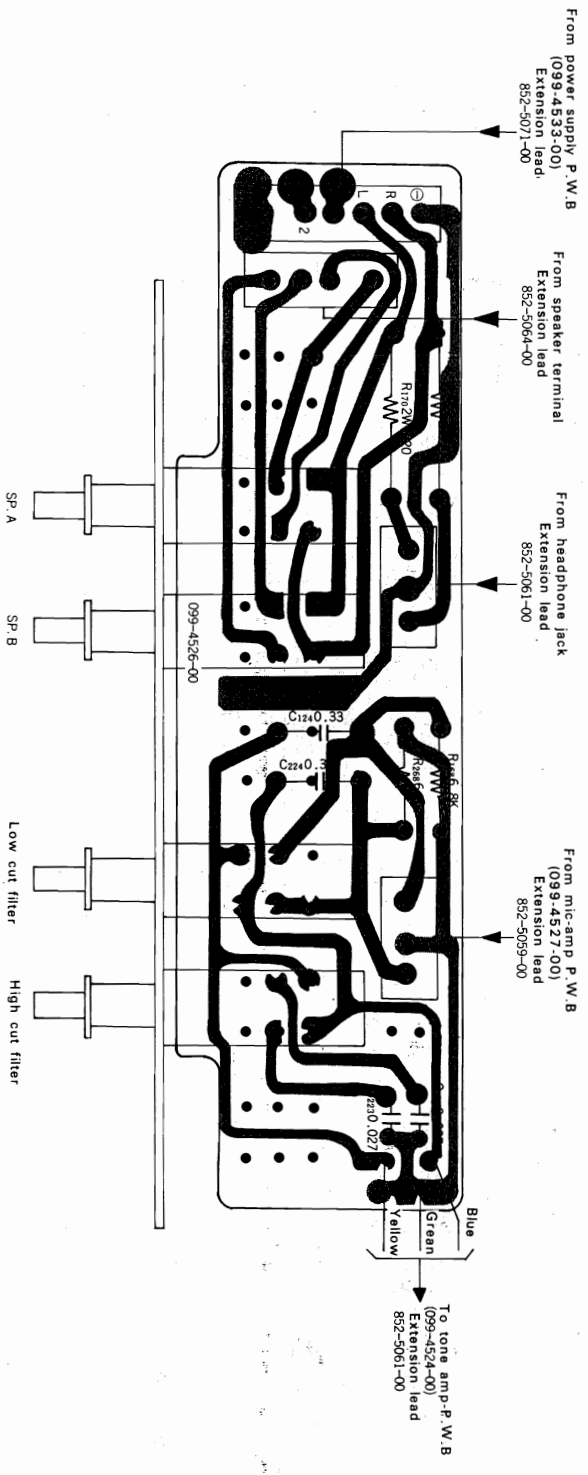


⊙POWER SUPPLY P.W.B ◀MA-7600G▶

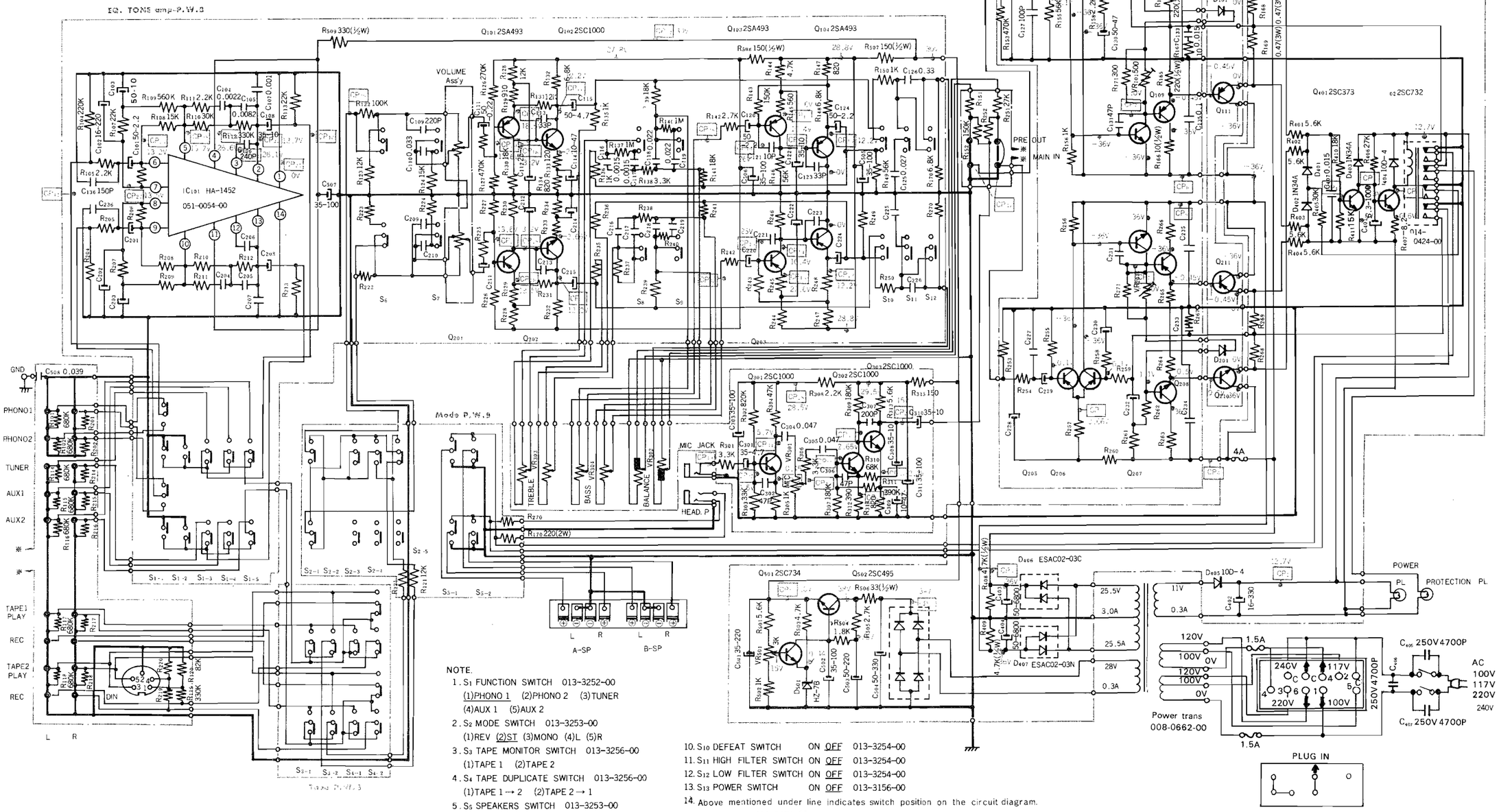
● Mark is for check point



⊙MODE P.W.B ◀MA-7600G▶



■CIRCUIT DIAGRAM ◀MA-7800G▶

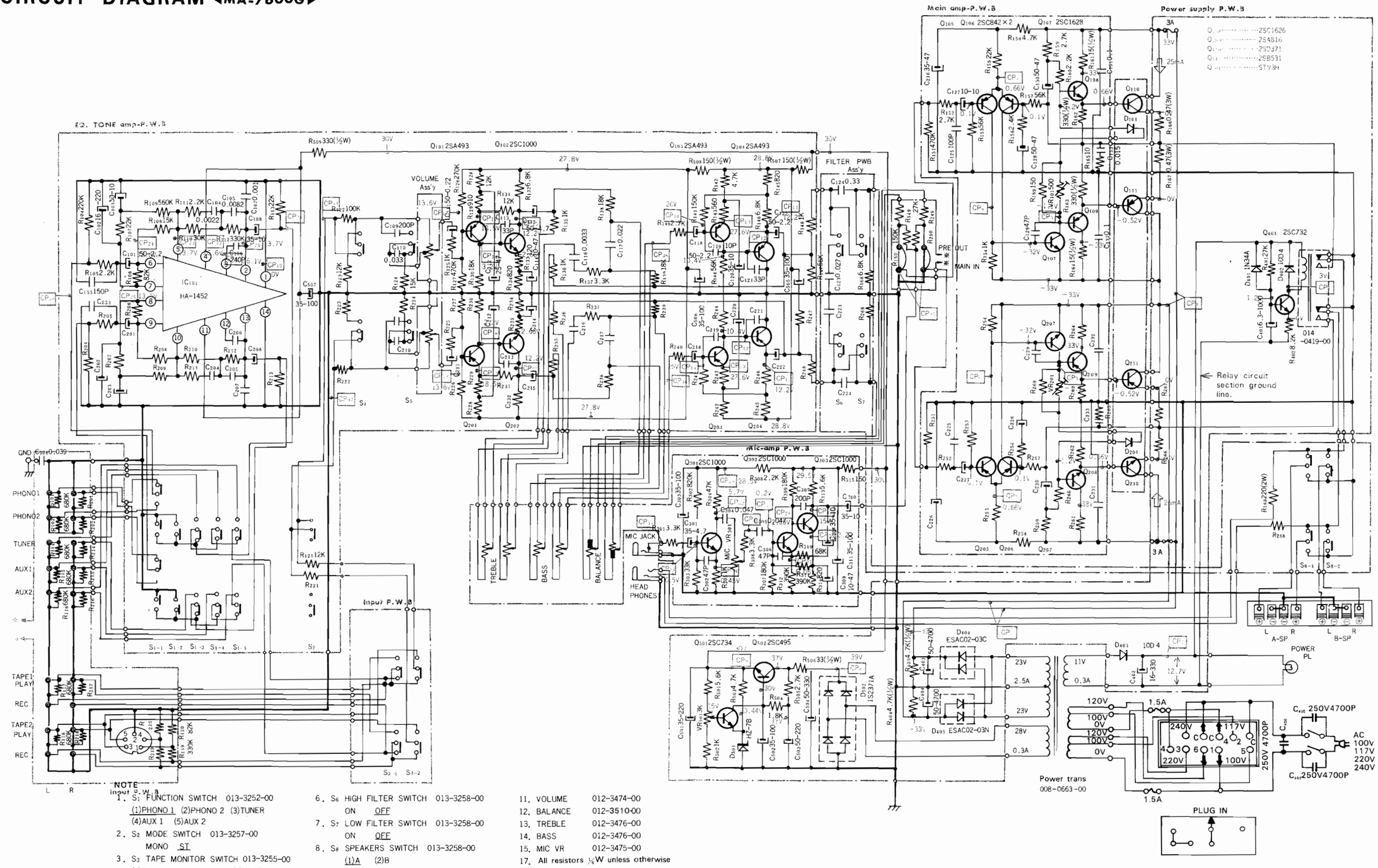


NOTE.

1. S_1 FUNCTION SWITCH 013-3252-00
   (1)PHONO 1 (2)PHONO 2 (3)TUNER
   (4)AUX 1 (5)AUX 2
2. S_2 MODE SWITCH 013-3253-00
   (1)REV (2)ST (3)MONO (4)L (5)R
3. S_3 TAPE MONITOR SWITCH 013-3256-00
   (1)TAPE 1 (2)TAPE 2
4. S_4 TAPE DUPLICATE SWITCH 013-3256-00
   (1)TAPE 1 → 2 (2)TAPE 2 → 1
5. S_5 SPEAKERS SWITCH 013-3253-00
   (1) A (2) B
6. S_6 MUTING SWITCH ON OFF 013-3254-00
7. S_7 LOUDNESS SWITCH ON OFF 013-3254-00
8. S_8 TREBLE TURNOVER SWITCH 013-3254-00
   5.0KHz 2.5KHz
9. S_9 BASS TURNOVER SWITCH 013-3254-00
   250Hz 500Hz
10. S_{10} DEFEAT SWITCH ON OFF 013-3254-00
11. S_{11} HIGH FILTER SWITCH ON OFF 013-3254-00
12. S_{12} LOW FILTER SWITCH ON OFF 013-3254-00
13. S_{13} POWER SWITCH ON OFF 013-3156-00
14. Above mentioned under line indicates switch position on the circuit diagram.
15. VOLUME 012-3474-00
16. BALANCE 012-3510-00
17. TREBLE 012-3476-00
18. BASS 012-3476-00
19. MIC VR 012-3475-00
20. All resistors ¼W unless otherwise

Voltage measurement multimeter used sanwa
SANWA A-303TR-D II
VOLTMETER
DC V ····· Switch to range
Voltage of protection section are with respect to protection section and are different from other voltage.

■ CIRCUIT DIAGRAM ◀MA-7600G▶



NOTE

1. S_1 FUNCTION SWITCH 013-3252-00
   (1)PHONO 1 (2)PHONO 2 (3)TUNER
   (4)AUX 1 (5)AUX 2
2. S_2 MODE SWITCH 013-3257-00
   MONO ST
3. S_3 TAPE MONITOR SWITCH 013-3255-00
   (1)TAPE1 AND TAPE1→2 (2)TAPE 2
4. S_4 MUTING SWITCH 013-3257-00
   ON OFF
5. S_5 LOUDNESS SWITCH 013-3257-00
   ON OFF
6. S_6 HIGH FILTER SWITCH 013-3258-00
   ON OFF
7. S_7 LOW FILTER SWITCH 013-3258-00
   ON OFF
8. S_8 SPEAKERS SWITCH 013-3258-00
   (1)A (2)B
9. S_9 POWER SWITCH 013-3156-00
   ON OFF
10. Above mentioned under line indicates switch position on the circuit diagram.
11. VOLUME 012-3474-00
12. BALANCE 012-3510-00
13. TREBLE 012-3476-00
14. BASS 012-3476-00
15. MIC VR 012-3475-00
17. All resistors ¼W unless otherwise

Voltage measurement:
Multimeter used
Voltage of relay circuit section are with respect to relay circuit ground line(different from case ground).